Macworld

INSIDE: MACEXPO GUIDE

MORE NEWS, MORE REVIEWS

iPod

1,000 songs in your pocket

Reviewed: Apple's digital music for the ear *and* the eye

Playlists

Favorites	>
Monday Morning	>
Party Mix	>
Road Trip	>
Top 5 Break-Up Songs	>
Workout Tunes	>

menu

- **7 pages of Mac OS X trouble-shooting tips**
- **Mac accounting software on test**
- **Apple iTunes 2**
- **KPT 7 reviewed**
- **How-to: Final Cut Pro 2**

www.macworld.co.uk

Simon Jary
editor-in-chief

With iPod and iEverything,
Apple is oiling the wheels
for our transition to Mac OS X.

The iCarrot and the stuck

"iPod and
iTunes are so
simple even
Wurzels fans
can use them"

An October *Macworld UK* reader poll (1,600 votes) (**www.macworld.co.uk/polls**) found that 74 per cent of readers were planning to or had already switched to Apple's next-generation operating system, Mac OS X. Apple CEO Steve Jobs was reported to be delighted. And so he should be — his company has bet big time on OS X's success. As much as we love them for their comfortable familiarity, pre-X operating systems (System 7, OS 8, OS 9) are antiquated in the extreme.

We moan about application crashes and how much time and effort is wasted in restarting the whole system, and yet many of us are plain scared to move to a more modern OS that has built-in defences to protect us from such disasters.

OS X can run most of the apps we use today, but only in its Classic mode — which lacks the robust strengths that the Unix-based OS is built for. Optimized (or Carbonized) programs are slowly being released, so our excuses not to upgrade are diminished day by day. The big two Mac apps — Adobe Photoshop and QuarkXPress — will be Carbonized in 2002; indeed I expect an OS X-ready Photoshop very early next year. Other programs, such as Illustrator, InDesign, and FreeHand, are already Carbonized for OS X. As soon as your favourite applications are Carbonized, there's really no excuse to hang about in the digital limbo of OS 9.

Clearly, Apple knows that many of its customers won't upgrade until well after they're able to. Fear of change is a powerful brake on evolution. And the company has pledged to support these users with occasional updates to Mac OS 9. It would be stupid to scare these people into the arms of Microsoft's Windows by effectively closing down OS 9 in order to push OS X down nervous user's throats.

If OS X seems daunting and unwelcome, a switch to Windows XP may perversely appear a safer bet. I'm sure that Apple is under no illusions that inducing change can provoke peculiar reactions. The company could easily send its loyal customers spinning out of its orbit into alien arms. Strangers often appear kinder than weirded-out friends.

Whether you knew it or not, Mac OS 9 was the first step we took to switching to X. OS 9 is a limbo land of opportunities to tempt us into change. That much was clear when the first major 9 upgrade (the free OS 9.1 download) subtly but radically altered our Macs' file structures. Suddenly, our programs were shunted into a hitherto unknown 'Applications (Mac OS 9)' folder. That parenthesis suggested a future 'Applications (Mac OS ?)'.

And, over the past two years, Apple has fostered a plan that seduces with gifts. OS 9 has brought us free stuff aplenty: iTools (the best thing to come out of Apple since 1984), with its free Internet storage space and pre-constructed Web sites; iMovie, a video editor that's as easy to use as it is sophisticated; iTunes, digital music that's so simple even Wurzels fans can use it; and iDVD, which makes home video cassettes appear as old hat as flipbooks.

None of this free stuff works with pre-OS 9 systems. Because they're free, we really can't complain. And Apple knows we'll be tempted by even more iGoodies.

Hence, Apple's iPod. It's a fantastic leap forward for digital-music aficionados — all these guys want is more capacity and faster delivery. iPod delivers both. It's expensive — but the tantalizing notion of untouchable benefits may be enough to open our eyes to the possibilities of change.

The iPod is also symptomatic of PC companies looking for alternative revenue streams. Just as Sony is making headway in the PC market, both OS giants Microsoft and Apple are trying to muscle into Sony's — hence, Microsoft's Xbox (Sony's PlayStation), and Apple's iPod (Walkman).

iPod requires iTunes 2, which, in turn, demands at least OS 9.2.1. With each step we draw closer to OS X. And the closer we get — the more times we get used to change — the shorter our eventual jump to OS X. What was once a leap now seems the next inevitable bound.

iDVD 2 won't work on anything but OS X 10.1. Neither will Microsoft's Office v. X, nor many new applications in the days ahead. Apple will keep dangling iCarrots in front of us until the last user bites.

This may seem cynical. It might smack of bribery. But who cares? If you're determined not to move with the times, why be envious of those who do?

Apple has played this game before, and with success. All Macs after the iMac didn't just look different, they thought different, too — with powerful G3 and G4 chips in every model thereafter. Nowadays many applications require at least a PowerPC G3 processor. Most games demand you have an OpenGL-supporting video card. Suddenly, your pre-G3 Mac is left out in the cold when it comes to using the latest apps or playing the hottest games.

And it's not just software that makes us upgrade our Macs. Peripherals post-iMac required USB or FireWire. Even older G3s — if beige — were left standing idle. Apple pushed us into the modern world, and while we may feel aggrieved at the shove, it's obvious that we were moved in the right direction.

As OS 9 increasingly becomes the bridge between the old world and new, we feel ourselves almost helpless in defending our aged and fragile home. Digging our feet in now is just prolonging the inevitable. It's time to change, but it's not going to be an easy ride. Thankfully, many braver souls have paved the way for us — bearing the brunt of a fraught introduction.

Even if the move to Mac OS X scares you right now, at least admit that it will be a positive and decisive step into the modern world. Mac users have always taken a different route than the rest, and we're proud that Apple is in the vanguard of personal computing. We don't like being pushed around, but we should be happy that at least Apple is gilding the path to a better tomorrow. **MW**
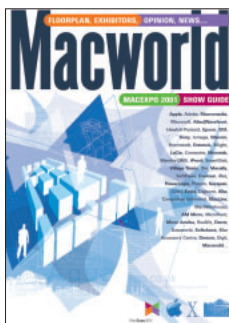
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Macworld Gamers Club

Your Star Letter wins a copy of StuffIt Deluxe 6.5

We reward this month's best readers' letters with a copy of StuffIt Deluxe 6.5.
Write to: Letters, Macworld, 99 Gray's Inn Road, London WC1X 8UT.
Or email letters@macworld.co.uk. *Please provide full name and contact details.*

Subject: PC World of Mac
I have never had a lot of faith in PC World. Not since they placed Macs out of the way in a dusty corner of the store. However, a few weeks ago I ventured to the store after trying without success to buy a new laser printer from a well-known Mac retailer.

I stood in the middle of the printer section and shouted: "Does anyone want to sell me a printer?". Immediately, a gentleman came to sell me a printer, and answered all my questions with conviction and authority. Then he carried the printer to the checkout for me. I'd like to congratulate the Selly Oak, Birmingham branch of PC World, and in particular Steve Robinson who helped me out.
Andy Frizzell

Subject: Cost conscious
I read Jonny Evans' news article in Macworld's October 2001 issue. He reported Apple CEO Steve Jobs' statement that: "We don't plan to launch any new hardware in Paris this year." On the basis of this, I went out and bought a 500MHz PowerBook G4, firmly believing no new PowerBook was due to be launched this year.

Even the dealers knew nothing about any new machine. Just two weeks later I hear of the new 667MHz PowerBook with AirPort card included, double the memory, and, worst of all, a completely new architecture. Plus it has a 16MB video card and larger hard drive. I approached Apple to see if they would do anything. Apple refused.

I'm in the media business and use a number of Macs. This

event will definitely force me to review our policy with regard to buying Apple's products in future.
S Popovic

Subject: Worthless vouchers
Why does Apple include software "upgrade" vouchers with its computers, but have restrictions on their use? I bought my iMac last September with Mac OS 9.1 on it. A few months after this, to my annoyance, Apple released the next generation of iMac with faster processors, CD-RW drives and Mac OS X.

Apart from having to spend £200 on an external FireWire CD-RW, I would like to upgrade to OS X with the use of my software-update vouchers. I have been told that I can't because my machine didn't have OS X installed when I bought it.

I wouldn't mind buying OS X for a reduced cost, but I begrudge having to pay almost £100 for it. I wouldn't expect to use vouchers several upgrades later, but I only want to go from 9.1 to 10.
Barry Sampson

Subject: DVD waste
I have recently installed OS X 10.0.4 into my Power Mac G4. After spending a few days familiarizing myself with the new system, and generally feeling fairly happy with my new surroundings, I decided to watch a DVDs.

To my amazement I found the latest DVD player only supported G4 Power Macs with AGP graphics cards. Wondering where I could find the PCI-supporting software I went to the Apple Support Discussion area, to find there's no support for the PCI G4s and Apple is not planning to release software for them either. If Apple keeps this up, it'll lose the love many have for it.
Stu Calder

Subject: Salesmen must learn
While in the computer department of a store in Edinburgh, I overheard a woman tell the salesman that she fancies buying a Mac "but a lot my friends use Microsoft and I've heard there are problems".

"That's true. We've got a good selection of Windows computers," replied the salesman.

Listening to him trying to sell her a Windows box, I started to get a bit Victor Meldrew. I picked up a copy of Microsoft Office: Mac and went over to her. Like something out of a 60s' soap powder advert, I said: "This, will solve your problem!"

She looked at him, and asked him if this would work with a Mac. "Oh yes, that'll work."

She was still not sure, so I chucked in a bit about Microsoft having shares in Apple.

As I walked off, she was looking at Macs again.
Don McClymont

Subject: Missed offer
Please note that the URL listed on the back of your Mac OS X free booklet with last month's Macworld (November 2001) does not work. Bit of a useless

offer If you can't see what the offer is.
John Gridley
MW: Apologies for that error. We printed the correct URL on page 62 of that issue, alongside the book review. In case you missed it, here it is again: www.it-minds.com/goto/vqsguides

Subject: Developer, developer
Something occurred to me while perusing your review of OS X 10.1. While I appreciate the more integrated feel of OS X, is Apple trying to put major Apple developers out of business?
1. They've included a development environment, which while good for creating more Apple applications, surely is going to reduce RealBasic's and Metrowerks' business?
2. It has included CD-writing and an MP3 software as standard. While they're not as fully featured as others, surely most people will stick with them rather than buying others.

I know it's actually quite a large bonus for users, but Apple should take not care to alienate smaller developers who filled gaps in older versions of the OS.
Chris Ward

Two top playable game-demos head up a full CD this month, ably supported by Ritz Accounting trial and the latest ConceptDraw Pro demo. Shareware, updaters, utilities & games — Vic Lennard opens the folders on our CD...

Macworld
EXPO ISSUE 2001

HOTTEST NEW GAMES!

Alien Nations
Real-time strategy survival simulation
Playable demo

American McGee's Alice
Spine-tingling thriller!
Playable demo

PLUS!
ConceptDraw Pro
Top drawing and diagramming program
Demo version

Ritz 2000/Payrole
Complete accounting management package
Trial version

QXP Maven
Preflight software for QuarkXPress
Demo version

Alien Nations demo

Alien Nations combines the complexity of a god-game with the linear progression of real-time strategy. Your objective is to make your civilization the best on the planet by conducting research, trading and diplomacy. It's easy to get into, making it ideal for both beginners and experienced players.

This single campaign demo allows you to play as the Pimmons, one of the three different nations from the full version.

Requires a 266MHz Power Mac with 140MB available RAM (or Virtual Memory turned on).
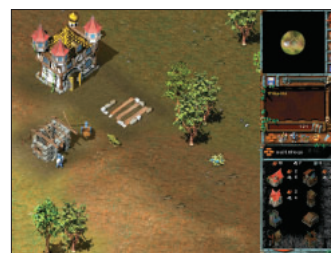
American McGee's Alice demo

A strangely familiar yet utterly wicked adventure. Upon her return to Wonderland, Alice barely recognizes the befouled setting. Equipped with courage and a lethal array of mischievous toys, she must penetrate the stronghold of her enemies and put the wicked Queen of Hearts in her place.

Fantastic 3D action based on enhanced Quake III technology. Play the first part of the game with the demo.

Requires a 400MHz G3 or better, Mac OS 8.6 or later, 3D video card with 8MB RAM, and 148MB available RAM.
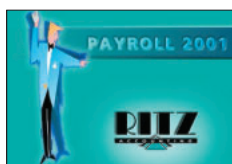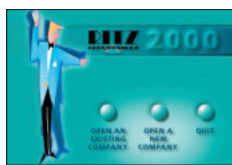
Ritz Accounting & Payroll trials

Ritz 2000 consists of a core accounting product that includes sales, purchase and nominal ledgers plus invoicer. Optional features include job costing, stock control, order and sales processing, multi-currency and cost centre analysis.

Payroll has everything you need to run your payroll operation, and complies with DSS and Inland Revenue requirements.

Check the Read Me files for trial periods after which products must be registered.
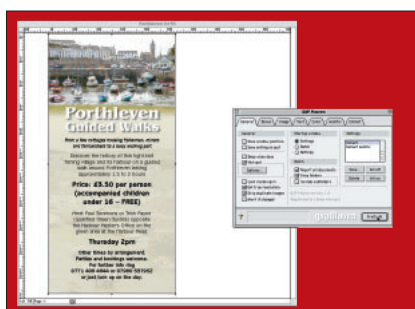
QXP Maven demo

A stand-alone utility that scans QuarkXPress documents for more than 70 kinds of potential problems that may occur at print time such as RGB images, suppressed items, spot colours and excessive scaling. Other features include batch processing, collect for output, and Autofix.

The demo version has limitations to the number of items reported or collected.
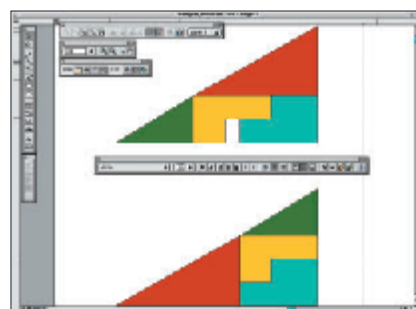
ConceptDraw Pro demo

ConceptDraw Professional satisfies the demanding diagramming needs of software and database developers, Web designers, architects and scientists.

The demo is Save and Export disabled, and places some standard text over printouts. Requires a Power Mac running Mac OS 8.6 or higher, and 32MB available RAM.

Cover CD
EXPO 2001

INSTALL ▶ Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

■ **Acrobat Reader 5**
Install this version to be able to read many of the on-screen manuals.

■ **StuffIt & RealPlayer**
Version 6.0.1 of StuffIt Expander and DropStuff is included as is the installer for RealPlayer 8.

■ **System tools & ATM Lite**
The CD also carries the latest version of InternetConfig, UnZip 5.32 and ATM 4.6.2 (required for Suitcase).

■ **QuickTime 4.1.2**
Some programs require QuickTime 4.1.2. This can be downloaded from www.apple.com/quicktime/download.

INSIDE MACWORLD ▼

EjectDisk 3.2
Eject any removable media from your computer with the touch of a key, from the humble floppy to the latest DVD. Shareware.

Fetch 4.0.1
User-friendly Mac FTP client that allows point-&-click, drag-&-drop file transfers over a TCP/IP network. Shareware.

iView MediaPro 1.2
Easy and fast way to view, organize and present the growing number of media files on your disks, from photos to sound files. Shareware.

MP3 Rage 3.8
Collection of tools for MP3 enthusiasts. Search for and download MP3s, edit ID3 tags, export files to AIFF format and more. Shareware.

Retro AS-1 2.1.2
Pro software synthesizer using new DSP technology. Recreate the sounds of all the classic analogue synthesizers. Demo.

and including...
ArKaos VJ 2.1.1, BrickHouse, Discalog 1.21, DreamSuite, FirewalkX, Language Assistant 2.5, Microsoft Outlook 2001, MTFMult for OS X, Who's There? for Mac OS X.

CellSynth 1.5
Software synthesizer with real-time functions and direct-to-disk recording. Shareware.

CD CATALOGUE ▼

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2001 – almost 244,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.1.1) is also included – don't forget to register if you find our library useful.

OS X HEAVEN ▼

OS X Heaven – your monthly one-stop shop for the latest OS X-specific software. Utilities, demos, shareware and games – OS X Heaven features the best Carbonized goodies for the Mac's new OS.

This month 20, demos and shareware programs include JPEGDeux, the native version of the ever-popular JPEGView, MP3 Rage 3.8, the do-it-all MPEG utility, and Jedit 409EX, a comprehensive OS X text editor. Useful utilities include dmgmaker, InternetTime, MenuCalendar 1.1, SuperGetInfo 1.0.2 and VMometer.

There are also a couple of Carbonized games: Awale X, a great version of the classic African beads game, and MarbleX, a must-play for all gamers.

SERIOUS SOFTWARE *includes* ▼

Atomik 2.0 demo
Atomik enables you to extract content from QuarkXPress documents as eXtensible Markup Language (XML) format in the most efficient way, and to enhance that XML with metadata (descriptive data that describes the content of the document). Re-purpose content from print publications for use in electronic publishing without cut-&-pasting from QuarkXPress.

The demo randomly scrambles some of the content in the exported XML, allowing you to assess Atomik right through to the final output stage from QuarkXPress.

Requires QuarkXPress 4.03 or later, and Mac OS 8.5 – 9.2.

XChange International Corner
XChange International, which specializes in QuarkXPress XTensions and plug-ins for Photoshop, Acrobat & InDesign, highlights products each month with demo versions available for you on the cover CD.

Create professional drop shadows in QuarkXPress with ShadowCaster, and set ads and tables with ease using the Multi Style II XTension. For Photoshop, there's nik Sharpener Pro (in Inside Macworld/Reviews) for pro image sharpening. For Acrobat, there's Quite A Box of Tricks, a high-powered collection of post-production PDF utilities. Finally, check out FlightCheck Classic's new features.

Visit **www.xchangeuk.com** for more info.

GAMES WORLD ▼
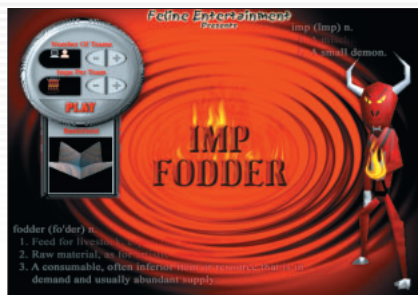
Imp Fodder

Imp Fodder pits legions of tiny demons in titanic battles of wits and sorcery over a variety of terrains. It will have you and your friends bent on obliterating each other in a non-stop series of intense arcade-style battles.

Imp Fodder features OpenGL graphics, deformable 3D terrains and harmless devastation that will have you laughing and crying as your imps either clean-up the enemy, or slowly dwindle away in the ensuing firefights. So sit back, relax, and let the fireballs fly!

Requires a G3 or better, Mac OS 8.1, OpenGL 1.1.1 or later, and 16MB available RAM. ATi Rage Pro 128 or better recommended.
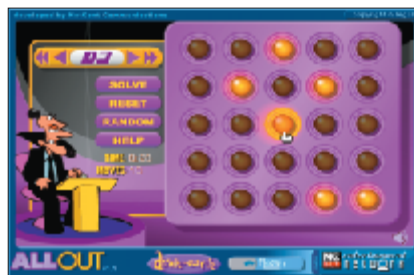
DEMOS & GAMES ▼

Our Top 10 Shareware Games folder has a heavy strategy content this month. There's 3D Sokoban 2, an excellent upgrade from the original version, AllOut, a fiendish new click-&-clear game, and CanYouFindIt, a spot the differences pastime. Plunk! 1.5.2 is one for the whole family while Shapes II 1.1 will appeal to the Tetris fans. Finally, Traffic 1.0 is a nice conversion of the Rush Hour game.

On the arcade front, there's Sky Traveler 1.2, a nice timewaster for the kids. And there's always space for the latest version of the evergreen David's BackGammon 4.2.1.

Like card games? Then enjoy Alan's Euchre 1.2 and the latest incarnation of the grandaddy of them all – Klondike 7.7.1.

(Top row) 3D Sokoban 2; CanYouFindIt
(Middle) AllOut
(Bottom) Traffic

ALSO ON THE CD ▼

COMMS & INTERNET
Eight programs including:
DownloadWizard 1.1
DupliMizer 2.3
HTML-Optimizer 5.5.2
Mail Forward 1.4
XML Tools 2.3.1

FONTS
FontViewer 1.4
Mini FV 1.2

GRAPHICS
Five applications including:
Designer Sextet
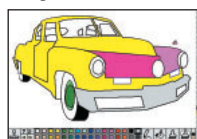
Etchelon Macdoodle 2.3
India Ink 1.6
SolarCell 1.3

ICON UTILITIES
Three items including:
IconizerPro 1.6.1
IconCalculator 1.0.5

INFO

ATPM 7.10
Extension Overload 5.9.2
LandscapeCalc 1.1.1
plus six utilities for developers

SOUND & MUSIC
Five programs including:
Amazing Slow Downer 1.11

Sweet MIDI Player 1.0.3
WhiteCap 4.1

UTILITIES
Five categories with 25 useful tools for your Mac including:

AddressBook 4.2.6.3
A-Dock 2.5
Alarm Clock Pro 3.8.1
BBEdit Lite 6.1.2
BTV 5.1

BTV Pro 5.1.1
Cool Unmount Volume 2.0
Desktop Resetter 2.7.1
DupFinder Carbon 1.2.1
File Freak 3.5
File Hider 2.1
FloatingNotes 1.0.2
iKeeper 1.2
MovieDumper
Notebook 2.1
Quit CSM 2.2
TexFinder 1.71

TimeSlice 2.2
TouchCMM 1.1
uCalendar 2.5.1

UPDATERS
This month's dedicated updaters folder includes over 35MB of patches to bring many popular applications bang up-to-date, including:
CatDV 2.0.2
Conflict Catcher 8.1
CyberGauge 3.2
Digital Performer 3.01
FlightCheck Classic 4.21
FILTERiT 4.0.1E
LaCie Updater 6.4.3
MOTU Audio System 2.33
NetBarrier Updater 2.1
Nisus Writer 6.0.3
Norton AntiVirus 5-7 (10/01)
Office 2001 Security Updater
PM2Q XT 6.2
Retrospect 4.3 Driver Update
Virex (10/01)
VirusBarrier (10/01)
VSE Search Engines 10/01
WaveBurner Pro 2.1

DON'T MISS… ▼

■ **Cool Extras**
Long Info CMM
Read Mac OS X's 255-character file names in the Classic environment.

Latest icons
Over 120 of the latest pixel gems.

■ **Mac ISP**
Access offers from AppleOnline & Moose Internet Services.

■ **Netscape/Internet Explorer**
Complete packages for Netscape 6 (with 6.01 update) and IE 5.

■ **Plus…**
… many thanks to Simon Youngjohns for our CD icons.

SHAREWARE

Association of Shareware Professionals

Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

Apple boosts performance with updated portable line

"Our Photoshop test came out 48% faster than on the 1GHz PIII Dell laptop"
— Sandy Green, Apple PowerBook manager

PlayStation 2 emulator for Mac planned

AFrench developer is running The Grinch Project, an attempt to create a PlayStation 2 emulator for the Mac. David Allouch hopes to reach an agreement with Sony and Apple that would permit him to release the emulation product in 2002. He told MacEvangelist: "Our module-based emulation can be used to emulate anything, and we have generated a lot of interest."

Sony has strongly defended against developers attempting to create emulation solutions that bring its games titles to other platforms. Sony and Connectix battled in the courts for two years as Sony struggled to defend its brand. The two companies eventually agreed a development deal under which they are working together on emulation technologies.

Allouch claims that his solution has been created without breaching any patents. His solution will require additional hardware for the Mac, and relies on Mac OS X, which he considers a "really good OS for emulation".   **MW**

Portable power up is the clarion call of Apple's product message this month, as the company introduces its autumn collection of significantly faster PowerBooks and iBooks.

PowerBooks get faster processors (up to 500 and 667MHz), larger hard drives and improved high-speed graphics. iBooks also get faster processors (500 or 600MHz), more hard-drive space, RAM and a variety of other improvements.

Apple's focus on portables reflects the sales success of PowerBooks and iBooks this year (see pages 28-29). It's an aggressive move by the company to stimulate sales by beefing up two of the most successful products its introduced this year.

In another market-stimulating move, Apple has made substantial discounts on iMac prices (see page 23), with generous discounts too on other products in its range. The company has also introduced

its revolutionary digital device, iPod – another strategic move to stimulate sales in the currently depressed IT market (full details on pages 24-27).

Introducing the improved PowerBook, Greg Joswiak, Apple's senior director of hardware product marketing, said: "We've made the fastest portable in the world even faster."

PowerBook line manager Sandy Green put forward another insight into Apple's plans: "For us on the PowerBook side, it's about performance; we wanted to ensure we bought extra performance to the line. It will be tremendous for our customers, especially those working with Photoshop. They can take advantage of Velocity Engine and go where they thought they couldn't go before with a portable system."

iBook success story

Apple shifted 251,000 iBooks in its last quarter. Now the company hopes

to drive sales even higher, with faster G3 processors working at up to 600MHz, a new system bus speed of up to 100MHz, larger hard drives and 128MB RAM pre-installed as standard across the range. Pricing starts at £1,099 (including VAT).

Dave Russell, director of iBook product marketing, explained the impact of the bus-speed increase: "We saw a ten per cent performance boost across the board just going to the 100MHz bus, we're really excited about the performance enhancements to the iBook. We think this will maintain iBook's incredible momentum since we introduced it in May."

"The iBook is Apple's best-selling portable ever," said Joswiak: "Now with more speed, more storage and more memory, they are incredible value."

The top of the range DVD-ROM/CD-RW combination drive-enabled iBook has had £100 lopped of its price – it now costs £1,499.

All models ship with Mac OS X 10.1 and Mac OS 9.2.1 pre-installed, with OS 9.2.1 as the default start-up system.

iBooks ship with either 500MHz or 600MHz G3 processors. The 600MHz model includes a 100MHz system bus, as opposed to the 500's 66MHz bus. All iBooks offer either a 15 or 20GB hard drive. CD-ROM, DVD-ROM or DVD-ROM/CD-RW "Combo" drive models are available.

Other features include a 12.1-inch screen, 256K L2 cache, and graphics support from the ATI Rage Mobility 128 graphics controller with 8MB RAM and AGP 2X.

iBook has dual USB ports, a FireWire port, VGA out and composite video connectivity, with built-in 56K modems, microphones and stereo speakers. They also support 10/100BaseT Ethernet.

Three models are available from resellers, with a 600MHz, 15GB CD-RW version available only from the Apple Store for £1,429.

The iBook 500MHz has a suggested retail price of £1,099 (inc. VAT), with a 15GB Ultra ATA hard drive and CD-ROM drive.

The iBook 600MHz sells at a suggested retail price of £1,299, with a 15GB Ultra ATA hard drive and DVD-ROM drive. With a DVD-ROM/CD-RW "Combo" drive, the iBook 600MHz with a 20GB Ultra ATA hard drive costs £1,499.

Gigabit PowerBooks

The new PowerBook G4s are available in 550MHz and 667MHz models. The 667MHz PowerBook has a new system bus running at 133MHz (previously 100MHz). The 550MHz model maintains the previous 100MHz system bus. Both models offer built-in Gigabit Ethernet networking. 256K of L2 cache (at full processor speed) is also installed.

Graphics support has been improved with the addition of the ATI Mobility Radeon AGP 4X graphics card, which offers 16MB Double Data Rate (DDR) dedicated video RAM.

"We went to 16MB across the board on video memory. It's something our customers have been looking for and we wanted to make sure we delivered to them," Green said.

"It will be great when they are working in graphics programs, but also when they are taking a break and playing games. We've doubled the frame-rates we saw previously – up to 45 frames per second playing Quake"

Maximum hard-drive size reaches 48GB in the new configuration, and there's a choice of slot-loading DVD-ROM or CD-RW drives. Both Mac OS X 10.1 and Mac OS 9.2.1 are pre-installed on the new pro-portables, with Mac OS 9.2.1 as the default start-up system.
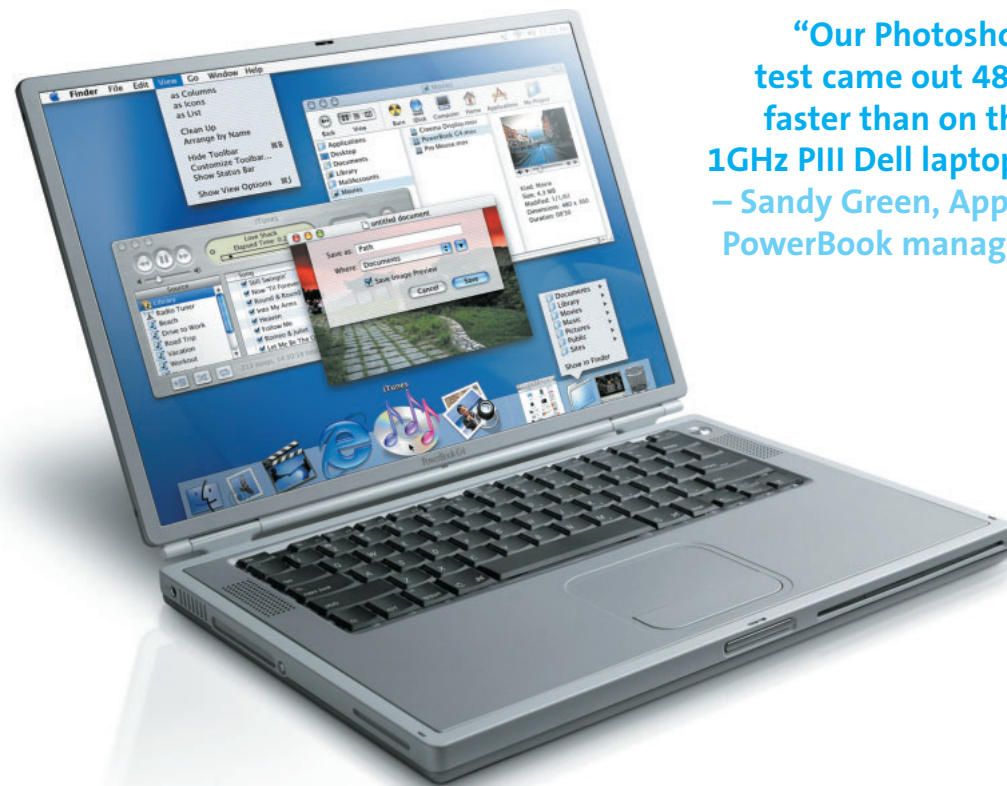
Drives hard to hear

The higher-capacity drives come equipped with what Apple described as Fluid Dynamic Bearing (FDB). This feature helps reduce the noise a drive makes during normal operation.

"FDB means the drives are going to run very, very quietly," said Green. "This is something we had the opportunity to take advantage of and we wanted to bring it to our PowerBook customers.

Screen size remains at 15.2-inches. The 30GB 667MHz model comes with 256MB RAM and an AirPort Card pre-installed, and costs £2,199 (excluding VAT). The £1,599 20GB 550MHz model offers 128MB RAM and is AirPort-ready. Both offer VGA and S-video connectivity.

"We worked very hard to make sure we improved our AirPort range, making it even better than before. One of the things we did a little bit

differently in the new PowerBook line versus previous generations of PowerBook and iBook is work with antenna. We have significantly increased the AirPort range," Green confirmed.

During the launch event, Apple's PowerBook team ran a 667MHz PowerBook against a Dell 1.13GHz Pentium III notebook. Both computers were tested using Photoshop and the PowerBook came out on top, according to Apple.

"Our Photoshop test came out 48 per cent faster than on the Dell laptop. That's something we were really pleased to see," Green said.

"We think customers are going to be very, very excited about the performance they are getting." **MW**
Jonny Evans, Jim Dalrymple

"We saw a 10% performance boost across the board"
— Dave Russell, director of iBook marketing

RAM doubled

Apple UK has a "double the pre-installed RAM" offer for new PowerBooks purchased from the Apple Store or authorized resellers. Customers buying a 550MHz or 667MHz PowerBook G4 between October 16 and December 31, 2001 receive double the standard RAM pre-installed. This means the 667MHz PowerBook will ship with 512MB of RAM, the 550MHz PowerBook with 256MB of RAM; standard RAM is 256MB and 128MB respectively.

74% plan Mac OS X switch

Nearly three quarters of *Macworld* readers believe Mac OS X 10.1 will make them switch from OS 9. 11 per cent of readers were unsure, and just 14 per cent were unwilling to move. 1,624 votes were cast in the October poll.

"I've already switched. It's so much better than pre-OS X. Change Luddites, or drag Apple down!" said one OS X convert.

Apple's distribution did receive criticism: " I went to buy 10.1 on its Saturday release, but it had sold out by lunchtime. Why should I bother if Apple can't get enough stock into shops?" asked one frustrated reader.

Most 'No' voters will migrate when crucial applications are Carbonized.

"I'm a graphic designer. I can't upgrade to OS X until Photoshop,

Quark and others run on it properly," said a 'No' voter.

It's more than an OS, observed one reader: "I don't run a Mac just to run an OS. When my apps work under X, then I'll switch."

The poll suggests *Macworld* readers will support Apple's next-generation operating-system plans, and will move en-masse soon.
www.macworld.co.uk/polls

Entry-level iMac now costs just £699 (inc. VAT)

Macworld News
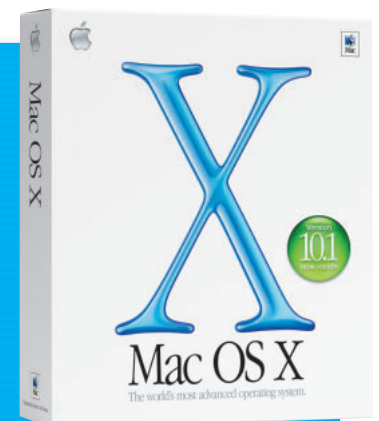
Apple cuts £100 off iMac price

Apple has slashed £100 off the cost of all iMacs, except the top-of-the range 700MHz model. The price cuts mirror statements made by chief financial officer, Fred Anderson during Apple's fourth quarter financial results meeting (see pages 28 and 29). He promised increased marketing spend and special offers over the coming months.

The company is also pushing iMac sales by introducing the 'Digital Memories' promotion. With immediate effect, customers buying a CD-RW slot-loading iMac between October 16 and December 31, 2001 can buy an HP Photosmart 318 2.3-megapixel digital camera for as little as £1.

Ton down

The £100 discount means the entry-level, Indigo 500MHz CD-ROM iMac with 64MB of RAM now costs £699 (including VAT), rather than £799. The 500MHz CD-RW iMac with 128MB RAM drops £100 to £899, and is available in Indigo and Snow. The CD-RW 600MHz iMac with 256MB of RAM – and available in Graphite and Snow – falls to £1,099. The top of the range 700MHz iMac price remains unchanged at £1,299.

Each of the four iMac models has a built-in 15-inch display with 1,024-x-768 resolution. Standard for all iMacs are: two FireWire and USB ports; built-in 10/100BaseT Ethernet; built-in 56K modem; all-digital Harman-Kardon sound system; support for optional AirPort wireless networking; and a software bundle offering iTunes, iMovie 2, AppleWorks, QuickTime, Palm Desktop, FAXstf, and the usual Internet and email applications.

All iMacs ship with a 16MB ATI Rage 128 Ultra graphics card and a 15-inch display. Each has a 256K L2 cache.

Free digital camera

To take advantage of the 'Digital Memories' promotion, customers should purchase iMacs from either the online Apple Store or participating authorized resellers. If purchased at the Apple Store, the camera ships with the order for a nominal £1. If purchased at a reseller, customers must download and fill in a coupon to take advantage of the offer, and pay a shipping and handling fee of £15.

Apple's iMac software offer, which applies to all CD-RW iMac purchases (in other words, all but the entry-level iMac), has also been extended. Due to end in September, the offer now closes December 31. Customers get the standard software package, as well as extra titles, including: Tomb Raider, The Last Revelation; Escape From Monkey Island; and Sim City 3000. Reference titles include: Route 66 Europe 2000; Encyclopaedia of Science; and Ultralingua language-dictionary. Edutainment titles in the package include Adiboo Environment, Star Wards Pit Droids and Talk Now (French tuition).

What isn't clear is just how long the current crop of iMacs will be available for. The price drops have inspired the usual speculation that they presage the release of a revised iMac range. Others suggest the generous discount could simply be shrewd marketing aiming to raise sales during the crucial Christmas shopping season.

The company has also fixed new prices for its Power Mac G4 speakers, DVD-R media (see below), and iBook AV cable. Apple's G4 speakers now cost £41 (all prices include VAT) – down from £46. However, an iBook AV cable has climbed slightly in price to £18, from £15.   **MW**

Snap up an iMac
Until the end of the year, all single purchases of CD-RW iMacs allow the buyer to claim an HP Photosmart 318 digital camera.

iDVD 2 'in November'

Apple will ship iDVD 2 for Mac OS X 10.1 this month. Announcing the upgrade in July, Apple CEO Steve Jobs said the software would create DVDs to rival those from the Hollywood studios.

With iDVD (and a DVD-R SuperDrive), users can create discs that work in standard domestic DVD players. iDVD 2 will ship with the 867MHz and dual-800MHz G4 Power Macs.

iDVD 2 offers new motion-video and sound menus. Other improvements include new themes, soundtracks in slide shows, background encoding, free positioning of buttons and support for 90-minute DVDs. It supports drag-&-drop, and title screens.

iDVD 2 runs on Mac OS X 10.1, and will be available as a £15 upgrade to iDVD users. It requires a Power Mac G4 with built-in DVD-R SuperDrive. It doesn't work with external DVD-R drives. For more on iDVD 2, see *Macworld,* September 2001.

■ Apple has dropped the price of its DVD-R five-pack media from £41 (inc. VAT) to £23.50.   **MW**

Apple's iPod sets portable digital music on FireWire

Apple has leapt into the consumer-device market by releasing iPod – a "breakthrough" £349 digital-music player that's capable of storing up to 1,000 songs on its pocket-sized, 6.5-ounce, 5GB hard drive. iPod will be launched for sale in the UK for the first time at London's MacExpo 2001 (see page 93) on November 22.

"No one has really found the recipe yet for digital music", said Apple CEO Steve Jobs as he introduced tat Apple's HQ in Cupertino, California.

"Not only will we find the recipe, we think the Apple brand is great for this", Jobs affirmed.

Pop don't skip
The 5GB hard drive contained within the device is just 1.8-inches across. The size of a deck of cards (see actual-size photo opposite), iPod stores digital tunes at various bit rates, including 160Kbps (bits per second), approaching CD-quality sound.

iPod has up to 20 minutes of shock protection (thanks to a whopping 32MB of memory cache) for non-stop playback when running, cycling, or negotiating London's transport system during rush hour. iPod skip protection works by preloading up to 20 minutes of music into the cache at a time, playing music from the cache rather

than hard drive so music won't stop.

iPod plays music in the popular MP3, MP3 VBR (variable bit rate), AIFF and WAV formats and can support MP3 bit rates up to 320Kbps. Its upgradeable firmware enables support of future audio formats. For CD-quality sound, iPod is equipped with a high-output 60mW amplifier that delivers 20 to 20,000 Hz frequency response for deep bass and crystal-clear treble. iPod's earbud-style headphones are built with neodymium magnets for enhanced frequency response and high-fidelity sound.

"To have your whole music library with you at all times is a quantum

leap when it comes to music. And iPod fits in your pocket. It's never before been possible," said Jobs.

Easy to use
The device has a 160-x-128-pixel high-resolution display, with a white LED backlight. This has been designed to give clear visibility in daylight as well as low-light conditions, and offers access to track and artist information, and a range of on-screen controls.

With customary design flair, Apple's made its consumer product easy to use. iPod's finger-controlled rotating scroll-wheel accesses the entire music collection by playlists, artists or songs.

The scroll-wheel features automatic acceleration when scrolling through long lists so you can find music in seconds. The crossfader automatically fades between songs.

It's got customizable settings such as shuffle, repeat, startup volume, sleep timer and menus in multiple languages including English, French, German and Japanese. iPod can display song data in any of these languages, enabling users to mix and match songs from all over the world.

iPod ships with an iTunes 2 CD, earbud-style headphones, a 2-metre FireWire cable and a FireWire-based power adaptor. In the US, the company is offering a 90-day limited warranty with the product.

iTunes 2 integration
iPod's Auto-Sync feature automatically downloads iTunes songs and playlists into the iPod, and keeps them up to date whenever it's plugged (via FireWire) into the Mac.

"With iPod, Apple has invented a whole new category of digital-music player that lets you put your entire music collection in your pocket and listen to it wherever you go," said Jobs. "Listening to music will never be the same again."

Jobs showed iTunes launching automatically when iPod is plugged into a Mac. Songs and playlists are downloaded to the device automatically.

"There's been anything like this before. And I don't think there's another company that could do this. To bring everything under one roof together – to be able to create a product like this," said Jobs

The device does not use a digital-rights management scheme. When it auto-syncs to iTunes 2, it can only connect to one copy of iTunes 2 on one Mac. However, the Mac iPod sees as its hub can be changed, and

its also possible to load and unload MP3s manually, though a note on the packaging warns: "Don't steal music".

Flaming fast FireWire
The product offers up to ten hours playback from its lithium-polymer battery. This battery will recharge itself directly from the Mac using the FireWire cable. The FireWire adaptor, which ships with the product, lets users recharge their device from any mains power source. The battery will fast-charge to 80 per cent capacity in an hour, and to full capacity in three hours.

Apple claims that iPod's built-in FireWire port lets you download an entire CD into iPod in less than 10 seconds and 1,000 songs in less than 10 minutes – 30 times faster than USB-based MP3 players.

The hard drive can also be used as an external FireWire drive for storing presentations, images or any other file, just by enabling FireWire disk mode on the device. In this mode, iPod can be used as a system disc to start up problem Macs, though, tellingly, Apple does not support this feature.

Apple's vision drives industry
Apple's strategy is focusing on its solutions as the hub for "the digital lifestyle". Jobs first delivered his vision of the digital hub at Macworld Expo in San Francisco. As the PC industry looked forward to a year of turmoil, Jobs said: "We don't think the PC is waning. We believe it is evolving."

It's an idea that's being picked up by other manufacturers. Online investors magazine, Smartmoney.com sees iPod as a significant "glimpse into the tactics computer makers are beginning to employ as demand for their core products wanes".

Compaq launched its iPaq Music Center in June. It includes a modem and hard drive and has been developed to add functionality to home stereo-systems. Hewlett-Packard also announced a similar product – this time integrating CD-R – called the Digital Home Entertainment Center.

Microsoft's recently launched Windows XP also implements many multimedia features and applications that echo Jobs' vision.

Eleven months since San Francisco, and Apple's visionary digital hub products include iTunes, iDVD and iMovie, as well as its desktop and laptop computers.

Jobs reinforced Apple's commitment to the digital dream: "We believe the Mac can become

<— 61.8mm —>

102mm

iPod: actual size shown above

Capacity: 5GB hard disk drive. Holds up to 1,000 songs in 160Kbps MP3 format.
Height: 102mm (4.02 inches).
Width: 61.8mm (2.43 inches).
Depth: 19.9mm (0.78 inches).
Weight: 185g (6.5 ounces).
Audio: Up to 20 minutes of skip protection.
Frequency response: Audio formats supported: MP3 (up to 320Kbps), MP3 Variable Bit Rate (VBR), WAV, AIFF
Upgradable firmware enables support for future audio formats.
Headphones: Earbud-style headphones with 18-mm drivers using Neodymium transducer magnets.
Input and output: FireWire port; 3.5-mm stereo headphone jack.
Display: 2-inch (diagonal) liquid

crystal display with white LED backlight; 160-x-128-pixel resolution, 0.24-mm dot pitch.
Included accessories: iPod earbud-style headphones; FireWire cable (2m); power adaptor; CD-ROM with iTunes 2 software and electronic documentation, Getting Started guide; 90-day limited warranty.
Battery: Built-in rechargeable lithium polymer battery; 10 hours playtime when fully charged via FireWire connector to Mac system or power adaptor.
Charge time: Fast – up to 1 hour (charges to 80 per cent of battery capacity; Full-charge time: up to three hours.
Minimum specs: Mac with built-in FireWire port; Mac OS 9.2.1 (or later) or Mac OS X v10.1 (or later); iTunes 2.

the centre of your digital lifestyle. We're being surrounded by these amazing digital devices these days."

"But there's never been a device built to take advantage of our digital

---

Online music state of play post-Napster

Apple's decision to release iPod is well timed, as the music industry and partners gear-up to launch their own subscription-based online music services. Critics condemn the business for its late arrival on the scene, while praising companies like Napster and MP3.com for getting the Internet onto the industry's agenda.

EMI Recorded Music senior vice president of new media, Jay Samit sums up: "Our strategy at EMI is to make buying music as easy as stealing it, and stealing it a hell of a lot harder.". On behalf of its members (the big music conglomerates) the Recording Industry Association of America (RIAA) bought Napster and MP3.com to their knees over the issue of copyright abuse. With the litigation covered by the dust of history, music's going online.

Superstar Madonna defended Napster to *Rolling Stone* magazine: "Napster could be a great way for people to hear your music who wouldn't have the chance to hear it on the radio," she said.

Subscription-based music download services from Pressplay and MusicNet are now preparing to launch. Backed by music's biggest names these will offer tracks and albums for download for a fee.

A joint venture of RealNetworks, AOL Time Warner, Bertelsmann and EMI, MusicNet offers a subs-based digital music-download service, and streams from three of the five major recording labels through RealNetworks, AOL and Napster.

Pressplay was formed by Vivendi Universal and Sony Music Entertainment, and has reciprocal deals with others to offer content from them.

Napster too is preparing to launch its own subscription-based online service. In July, a former Bertelsmann executive took over as Napster's CEO. Bertelsmann will integrate Napster's Web infrastructure – except for peer-to-peer file sharing – into its BeMusic division, which includes many music and entertainment properties, such as CD-NOW. Bertelsmann has been involved in Napster since extending a loan to the lawsuit-battered company last year.

To avoid cumbersome licensing negotiations, US record labels and music publishers reached an agreement in October that will allow record companies to automatically license works for online music services without having to clear songs with individual publishers.   *Jonny Evans*

applications – what if there was? So we decided to do it," he said.

"Why music? Well, we love music, and it's always good to do something you love." Jobs looked at the market Apple's getting into: "Music is part of everyone's life. It's a large target market. It knows no boundaries, and there's no market leader."

Industry reaction

NPD analyst Stephen Baker believes the home-entertainment business Apple is aiming for will be the "it" market of the future. It's also a sign of the increasing convergence between various forms of home entertainment, computing and the Internet, he said.

Praise for iPod came from Susan Kevorkian, an analyst with IDC: "This definitely raises the bar in portable-music devices in terms of industrial design and capacity."

Baker warns that consumer-electronics products, while attractive because they offer better profit margins, also have longer life spans

than PCs. However, the manner in which the digital lifestyle will evolve is open to question, and companies hoping to seize a slice of that market must risk much in developing products to fill needs that consumers haven't recognized.

Mac-only for now

In future, Apple expects to offer a version of iPod for Windows users, but right now the company is focused on its Macintosh customers, said Phil Schiller, Apple's vice president of worldwide product marketing.

"When we get a little spare time, we'll look at taking it to Windows. We know the experience won't be as good, but we'll probably look at that down the road," he said.

Market reaction is positive: "They won't be able to build enough of these things," said Rob Enderle, research fellow of Giga Information Group. "Apple will probably struggle to manufacture enough of the devices to meet demand this holiday season", he said.

Jonny Evans, Jim Dalrymple and Jason Snell contributed to this report.

iTunes 2 answers user music wishes

Apple has upgraded its iTunes digital-music software. iTunes 2 adds three of the features most requested by users - the capacity to burn MP3 CDs, an equaliser and a cross-fader. An MP3 CD holds up to ten hours of music – over 150 songs. Standard audio CDs are limited to 74 minutes of music. iTunes 2 supports 320Kbps encoding – MP3's highest compression setting, though its default setting is 160Kbps.

iTunes 2 keeps all the features that made iTunes so popular that it was distributed six million times, according to Apple. It rips MP3s; accesses Internet radio stations; browses music collections by artist list, album or genre; searches; creates play lists; and burns CDs.

iTunes 2's CD-burning feature is twice as fast as its been before, according to Apple. The Sound Enhancer makes for richer audio playback, while the 10-band equaliser (with 22 presets) optimizes playback. The fader is for smooth transitions between songs, and makes for smoother playback of tunes mixed from different albums. iTunes 2 now features unicode support for Japanese, Korean and Chinese characters – even in the same interface.

iTunes 2 is available as a free download (**www.apple.com/uk**) from early November, and ships as standard with new Mac systems and iPods. It requires Mac OS 9.2.1 or Mac OS X 10.1 or later. **MW**
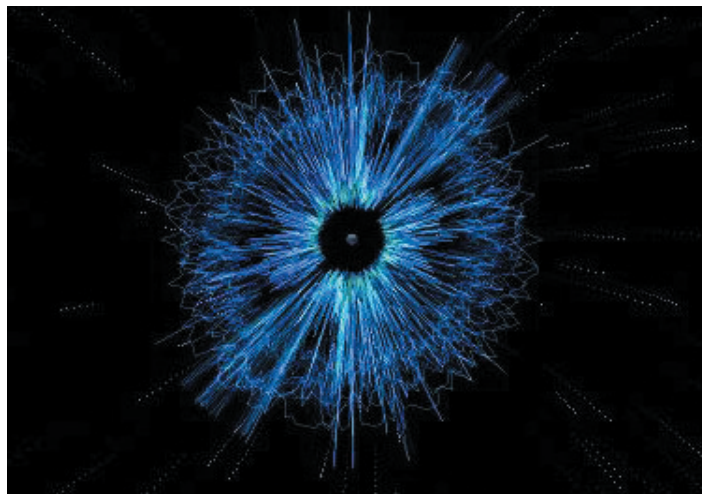
Download new iTunes visualizations

Independently developed visualizations for iTunes are beginning to appear. David H Goeb software (DHB) used Apple's iTunes Visual plug-ins software development kit (SDK) to create his own visualizations.

DHB's BlueStarWarp 1.0.4 visualization (pictured above) features a diorama of stars and a space warp that moves to the music. It supports up to 128 user-created presets. FlowerPowerFlow is also available offering flowery iMac-inspired sequences of dancing flowers. FreeFireBird 1.0.6 has avian-themed sequences. DarkSosiaBay gives

a static viewpoint as sound waves glide by. It contains 30 built-in presets and supports 128 user-defined presets. Available from: http://members.home.net/peagreen/dhg_plugins.htm

G-Force 2.1.2 is another freeware collection of iTunes visualizations from Andy O'Meara. These act as screensavers accepting audio from external sources using the Mac's audio input. It features thousands of effects, and works with iTunes, Winamp, Sonique, Audion, SoundJam and Echo. WhiteCap 4.1.2 a, wire-frame based visualization, features over 130 special effects in both window

and full-screen modes. O'Meara's work forms the core of some of Apple's own iTunes visualizations. www.55ware.com

■ Also of interest to music buffs, Analogue Ripper 1.0 – $19.95 shareware – is available now. This records analogue sounds if the sound source is connected to a Mac, so vinyl and cassettes can be converted to CD or MP3. Features include editing and playback tools to fragment sound-files into smaller tracks that can then be saved to disc or sent directly to an MP3 encoder. http://homepages.which.net/~i.mann/TAR/Ripper.html

Apple upbeat on financial future

Apple returned a net profit of $66 million for the fourth quarter (Q4) ended September 29, 2001 – delivering a loss of $25 million on the year's business. The year's results reflect the worsening economy and Apple's disastrous first quarter in which the company lost a massive $195 million. This was attributed to the first impact of the recession. Apple has consistently returned profitable quarters since Q1, helped in part by strong sales of G4 PowerBooks and iBooks.

Apple CEO Steve Jobs (pictured) said: "Apple accomplished a lot in 2000. It gained market share in education, launched Mac OS X, released the stunningly fast Mac OS X 10.1 update, and opened the first Apple retail stores."

Apple's chief financial officer Fred Anderson said: "We're pleased to have delivered solid results while maintaining lean channel inventories in a very challenging environment. Given the uncertain global political environment and weak economy,

Gross margins were 30.1 per cent this quarter; they stood at 25.1 per cent in the previous quarter. Savings came from decreased prices of key components, including LCD displays and RAM modules.

we are targeting December quarter revenues of at least $1.4 billion," he revealed.

Apple shifted 850,000 Macs worldwide during Q4, for a grand total of 3,087,000 Mac sales globally during the entire financial year. Apple sold 32 per cent more iBooks worldwide in its fourth quarter compared to its third. Power Mac sales grew 10 per cent.

Conversely, iMac sales shrank 4 per cent, with PowerBook sales declining 46 per cent during Q4. iBook has captured the consumer zeitgeist, with 251,000 iBooks sold during the quarter. Apple's consumer portables' success contrasts with the fading glory of the iMac, with 294,000 shipments. 248,000 G4 Power Macs and 57,000 PowerBook G4s also shipped in the quarter.

Education re-learnt
Apple has regained ground lost during its damaging US educational sales team reorganization last year. In the past quarter, it tripled iBook shipments to the US education sector. IDC declared the company to hold 18.2 per cent of the US education market for portables in 2000.

Jobs rejoiced: "iBook sales to education tripled last quarter, further strengthening Apple's position as the leader in education portables.

Despite cautious expectations for the next quarter, Apple's corporate balance sheets remain strong with $4.3 billion in cash and short-term investments

Districts, schools and administrators, along with teachers, students and parents really love the iBook."

Recognition
Apple's had a great year for recognition. Most recently UK PC title *Personal Computer World* voted the PowerBook G4 to be the Best Notebook Computer of 2001. Its editors said: "Apple's G4 PowerBook

is without doubt the best-looking notebook available today; but it's the technology that really impressed."

Four Rave Awards came from *Wired* magazine, three from *Business Week*, and three more from the D&AD. The prestigious US Academy of Television Arts and Sciences awarded a 2001 Primetime Emmy Engineering Award to the company to recognize FireWire's "material impact on the television industry".

Research and development
Apple believes it can "innovate its way" out of recession. Research and development spending increased 13 per cent year-on-year.

Discussing Apple's financial quarter, Anderson said: "Over the next year we'll be introducing some truly great hardware and software as Apple leads the transition to a digital lifestyle."

Despite a depressed market and a commitment to R&D, the company successfully attained margins of 30 per cent, reduced operating expenses and exercised iron control of its inventory levels. The migration to Mac OS X 10.1 is also gaining power, as key applications begin arriving on the Unix-based desktop.

Retail Mac
43 per cent of Apple's revenue during the quarter came from the online Apple Store.

In an attempt to increase its customer base, Apple opened retail outlets across the US in upmarket, strategically chosen high-traffic locations. 13 are open at the time of writing, with 25 promised by year's end. However, where the company originally predicted its stores would break even by December, it now warns of a slight loss, due to weakened consumer confidence. Third-party software sales in-store have been better than predicted, motivating Apple to double (to 600) the number of third-party titles available in its stores.

The retail stores have enjoyed higher than expected sales of pro systems, Anderson confirmed. "The stores appeal to both consumers and professionals," he said.

Reaction and future
Reaction to Apple's announcements was optimistic, given the malaise surrounding IT. Forbes.com columnist Arik Hesseldahl observed: "At $16.99 a share (closing price, October 17), Apple is only 37 per cent off its 52-week high. Compare that with the

performance of PC companies like Compaq, which is off 69 per cent from its high; and Gateway, off 90 per cent. Dell has done better, off less than 30 per cent from its most recent high."

Many analysts revised downward their predicted earnings per share for Apple's stock. Despite this, the majority of analysts believe Apple's stock is worth hanging on to, with some recommending investors buy while the market's low.

Needham and Co. analyst Charles Wolf said: "Apple continues to be profitable and to earn operating returns on capital that far exceed its cost in by far the worst downturn to have hit the industry in 20 years."

An unnamed Goldman Sachs analyst told AFX news: "Apple is not immune from industry weakness, but management has executed very well and delivered solid, profitable results. We continue to believe the stock is attractive," he said.

The future remains cloudy for business globally.

Anderson remarked: "Given the turbulent world, visibility for the upcoming quarter is not good." The company offered no guidance for its next financial year because of global market uncertainty, but did warn that

profits for the new quarter could fail to meet expectations.

Anderson told analysts that PowerBook sales should perk up a little, and iBook sales should remain strong. The company expects iMac and Power Mac sales to remain consistent with Q4 sales patterns.

"Looking forward, we think the second half of the fiscal year should be a little better than the next six months," he said.

"Our own internal planning is consistent with that outlook." He also promised more advertising and special promotions over the next three months.   **MW**
Jonny Evans, Dennis Sellers

Apple had a strong year for a company caught up in such difficult market conditions. The three graphs below

illustrate this, demonstrating that the company has successfully managed to maintain growth in unit sales and revenues

throughout the year, following its loss-making first quarter. The cost of sales has also been managed successfully.

First quarter   Second quarter   Third quarter   Fourth quarter

CPU sales by product (in thousands)
iMac   iBook   G4 Cube   G4 Power Mac   G4 PowerBook

CPU sales revenue (in millions)
iMac   iBook   G4 Cube   G4 Power Mac   G4 PowerBook   Peripherals & Software

Unit sales by geographical region (in thousands)
Americas   Europe, Middle East, Africa   Japan   Asia Pacific, Retail and non-geographic revenue

Share Prices (in dollars) — Dollars — October

G3 and G4 head for gigahertz

IBM announced a major upgrade to its 750 line of G3 processors at the Microprocessor Forum in San Jose, the 750FX PowerPC processor – which runs at between 700MHz and 1GHz, and holds a 512K on-die L2 cache.

The improved G3 uses IBM's advanced 0.13-micron copper process that exploits Silicon On Insulator (SOI) and a technology called SiLK low-K dielectric. IBM's new offering is its highest-performing PowerPC, because it harnesses these new innovations. SOI reduces power consumption, as does SiLK low-K. The 0.13 micron copper delivers 3.6W of power at 800MHz, substantially lower than equivalent processors.

Double-decker bus
Compared to previous versions of the 750 (the 750CX and 750Cxe), the new processor offers double the L2 cache. It also supports double the peak bus speed, maintaining 200MHz at peak performance levels. The bus is more efficient, delivering 25 per cent greater bandwidth on the bus.

Apple employs the 750CX and 750Cxe within its iMac and iBook lines. If the 750FX is chosen for future iterations of these, iBooks and iMacs stand to benefit from much faster processor speeds and noticeable improvements in system performance – albeit on non-Velocity Engine-enabled G3 processors.

Apple hasn't yet disclosed if it plans to make use of IBM's microprocessor solution. Motorola has also been working hard, reports

claim. Online IT news Web site The Register has been tracking the company's progress with its G5 chip.

G5 'blistering'
The G5 – Motorola's PowerPC 8500 – is moving steadily closer to release, The Register reports. This chip is the next major revision of the PowerPC architecture. Features include a new internal bus structure, a longer, ten-stage instruction pipeline, and redesigned math-processing units. The chip will be made available in 32-bit and 64-bit versions. Like IBM's G3, the G5 will use 0.13 micron SOI technology. The Register believes the processor (at 1.4GHz) pulls 26W of power in use – 9W more than the current G4 (at 533MHz), though some rumour sites suggest a future refinement could fix this.

Tests promise blistering performance from Motorola's new offering, soaring ahead of that of Intel's 2GHz Pentium 4. Tests by the Standard Performance Evaluation Corporation (SPEC) show the 1.6GHz G5 returning a SpecInt2000 score of 1,340 and a SpecFP2000 score of 1,359 compared with the 656 and 714 scores (respectively) of the 2GHz Pentium 4.

SPEC is a non-profit corporation formed to establish, maintain and endorse a standardized set of relevant benchmarks that can be applied to the newest generation of high-performance computers.

It bodes well for Apple's future, promising Macs at speeds of 1GHz and beyond – the closing of the Gigahertz Gap. Given the PowerPC

MILES COLE

performance advantages explained by Apple vice president of hardware engineering Jon Rubinstein at New York's Macworld Expo in July; and successful product development under Motorola and IBM's belt; Apple could seize the performance crown from the competition.

Exceeding expectations
It's widely believed that Apple will make use of Motorola's newest processors in future builds of its professional desktop Macs. An unexpected bonus for Apple in recent months is that the G4 processor inside Power Macs today has already exceeded Motorola's speed expectations. Motorola's European marketing communications manager confirmed that the G4 processor currently used in Power Macs could, in theory, be produced at speeds exceeding 1GHz – in excess of Motorola's expectations for the architecture.

Jonny Evans

MW

New multiprocessor servers

Apple has added two fast 800MHz multiprocessing servers to its range, complementing the 733MHz single processor server introduced last month.

The multiprocessing servers boast faster processors and symmetric multiprocessing – a feature built into Mac OS X Server. Symmetric-multiprocessing support means servers are able to do twice the work at the same time.

They ship with Mac OS X Server

pre-installed, offer 256K L2 cache and 3MB L3 cache per processor. Each system contains a CD-RW drive, NVidia GeForce2 MX graphics cards, Gigabit Ethernet, and the usual USB and FireWire ports.

The mid-range multiprocessing system ships with 256MB of RAM and an Ultra ATA 80GB hard drive. The top-of-the-range system in the UK comes with 1GB of RAM, two 36GB Ultra160 dual-channel SCSI hard drives, and a dual-channel SCSI card.

The dual-channel SCSI drive runs at 10,000rpm. It will read and write data at higher speeds than ATA drives, supporting data-transfer speeds of up to 160MB per second.

With the dual channel SCSI card, external SCSI devices can be connected to the SCSI bus without affecting the performance of the drives.

The mid-range Server costs £2,799. The top of the range model is £3,749.

MW

AirPort printer take-off

Hewlett-Packard (08705 474 747) scores an industry first this month, announcing a product that lets Macintosh users print wirelessly over AirPort networks.

The wp110 wireless print server is Wi-Fi certified, so it will work with other 802.11b wireless local area network (LAN) products. 802.11b is the name for the standard employed by Apple in its AirPort range. In great secrecy, HP has been demonstrating pre-production prototypes of the wp110 to key journalists since the beginning of the year.

Ports of cool

The device, which is both Classic and Mac OS X compatible, hooks up to your HP printer using the parallel port – which is fine, as it connects to the Mac wirelessly over the 11Mbs AirPort network. This also leaves the printer's USB port free for connection to a stationary Mac, if necessary. Mac users may print wirelessly from distances of up to 30 metres. Security is provided by the server's capacity to send print jobs over the network while employing the 40-bit WEP (Wired Equivalent Privacy) standard.

Set up is easy via an install wizard. It also contains an embedded Web server, so the printer may be managed and configured remotely over AirPort using a standard Web browser.

Hewlett-Packard has given the wp110 the benefit of a little future proofing, adding a dose of flash memory to the product for future software upgrades. Dimensions are 180-x-137-x-36mm, and it weighs 300g. The product is scheduled to ship November 15. **MW**

On the CD

■ **MP3 Rage 3.8 ($25) lets you organize and edit MP3 files. With it, you can edit MP3 tags and file information, catalogue MP3 files, and locate tracks by genre, title or other criteria in a folder or disk. It has searching abilities too – using Napster or Gnutella. MP3s can be analysed and adjusted to play at the same volume levels, exported to AIFF format for burning onto CDs, and more. It also plays MP3s. The application runs on Mac OS X, 8 and 9.**
www.chaoticsoftware.com

■ **ArKaos has released Visualizer 1.5, a free plug-in for iTunes, SoundJam 2.x and Audion 2.x. ArKaos offers a selection of on-screen visualizations, coming with 11 pre-loaded files. More are available for download from the company Web site. Optimized for Velocity Engine/AltiVec, this version runs on Mac OS X.**
www.arkaos.net

■ **iView Media Pro manages media assets on disks, servers and CDs. It enables images to be viewed, plays back movies, compares fonts, prints reports, runs slide shows, and publishes Internet galleries. It will also create catalogues of your entire media assets. This runs on Mac OS X and OS 8.5 or later. A single user license is $55.**
www.iview-multimedia.com

Handspring's Palm mobile Treo duo

Handspring has unveiled a fresh product line, Treo, that integrates a Palm OS PDA with a mobile phone. Treo ships in the first quarter of 2002, and has a windowed flip-up cover in which the window is the size of the 4-bit, greyscale display. Two models have already been announced: Treo 180, which uses a small keyboard for data entry; and the 180G, which employs Palm's Graffiti handwriting recognition technology.

Mark Dadger, Handspring product manager, said: "We feel strongly that the keyboard adds advantages for integrating the device with cell phone capabilities," he said. "On the other hand, we realize that people like Graffiti."

"We've gone pretty far out of our way to make sure these phones are usable with one hand," Dadger affirmed.

Both devices will be enabled for wireless communication using GSM (Global System for Mobile Communications), and the software lets users upgrade to GPRS (General Packet Radio Services) services in the future, Dadger said. The product also integrates a dual-band GSM radio. In the future, Handspring will also release software to let users check email from ISPs, and a version with a colour display.

Blazer browser

The Treo offers a series of on-screen features, including a 50-number memory, phone keypad, address book, Short Messaging Service and an integrated PDA Web browser called Blazer. It also offers an IR port The Treo is powered by a 33MHz Motorola DragonBall VZ processor, contains 16MB RAM, and holds a battery offering up to two and a half hours of talk time, or 60 hours in standby. The Treo will cost approximately £415 when it ships. In the US the unit costs $399 – the disparity is due to Handspring having not yet made an outside-US deal with a mobile phone operator to sell the device attached to a network. When a deal is made in the UK, the purchase price should drop, reflecting a subsidy payment from the mobile network operator. **MW**

Still trouble for double

Working together

In Mac OS 9, MP applications split their tasks between two processors. But most apps run on only one processor, and the OS has no way to divert tasks to the second CPU. When one chip reaches the limits of its processing power, applications that are MP optimized aren't able to send some of their work to the other chip.

Work gets divided differently in OS X. The operating system can send different programs to different processors, splitting the work more efficiently. This doesn't translate to system performance that's twice as fast as it would be with only one chip, but it does mean that one processor will reach its limit more slowly as other, non-MP-savvy programs are launched.

Some applications are OS X native and MP savvy. Quake III is perhaps the best example of this (see "Twin engine"). Rather than having to work on just one processor while other programs run on the other, Quake III can split its tasks up, sending the work of game play to both processors at once. Therefore, the operating system does not have to "assign" Quake to one processor or the other.

Double up

A number of major Mac applications have been written to take advantage of multiprocessing and run natively in OS X. And more are on the way. This list shows which MP-savvy apps are Mac OS X native:

Activision Quake III	Yes
Adobe After Effects 5.0	No
Adobe Photoshop 6.0	No
Adobe Premiere 6.0	No
Alias|Wavefront Maya	Yes
Apple AppleWorks 6.2	Yes
Apple Final Cut Pro 2.0	No
Apple iDVD 2.0	Yes
Apple iTunes 2	Yes
Maxon Cinema 4D XL 7.1	Yes
Media 100 Cleaner 5	No
NewTek LightWave 3D 7.0	Yes
Sorenson Video 3.0	No

Every time a dual-processor Mac arrives on the scene – whether it's the 1996 Power Macintosh 9500/180 MP or the Power Mac G4/500 DP that appeared four years later – Mac users hail the advent of multiprocessing. But all dual-processor Macs have faced the same hurdle: users won't enjoy significant performance gains unless they're using applications specifically written to take advantage of multiprocessing.

With Mac OS X, though, all of that should change. For the first time, there is a universal benefit for all Mac users who purchase a dual-processor machine: large parts of OS X have been designed to take advantage of multiple processors. Unlike previous versions of Mac OS, the new operating system divides various tasks between processors, whether applications are MP savvy or not (see "Working together" left).

MP ready?

A frequent question at *Macworld's* forums is: Now that Mac OS X has arrived, should I run out and buy the dual-processor 800MHz G4? The answer is largely the same as it was a year ago – an unequivocal maybe, leaning toward yes.

Although numerous processor-intensive programs have been optimized for multiprocessing, most of these applications have yet to be Carbonized, let alone written in OS X's Cocoa programming application.

Users running a multiprocessor-enabled application in OS X's Classic mode will see some benefit, though not the performance boost you could expect from an MP-savvy OS working in tandem with an MP-savvy program. An MP-enabled application running in Classic on a dual-processor machine should be faster than the same program running on a single-processor Mac. But its performance will lag behind that of a dual-processor machine running OS 9.
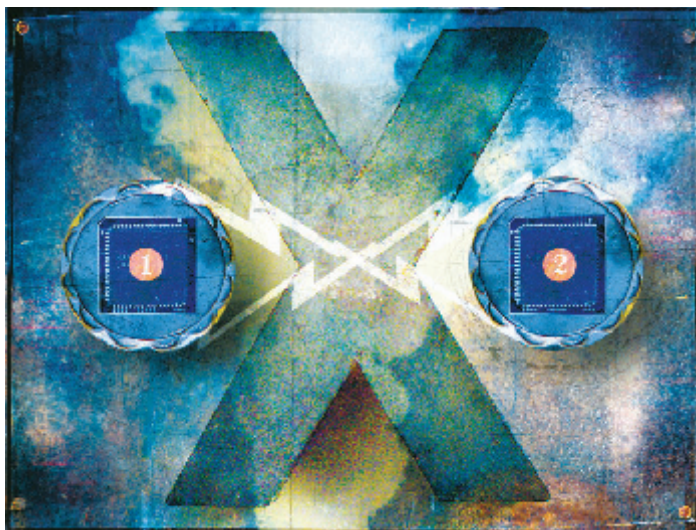
While the dual-processor Mac makes much more sense for someone who uses an MP-savvy, processor-intensive app that runs exclusively as an OS X-native program, that's not a universal experience. The dual-processor Mac isn't much more attractive now than it ever has been to a user running a non-MP application in Classic. It's only slightly more appealing than it used to be for those who work mainly in MP-savvy apps that haven't been Carbonized.

As more programs are Carbonized, the dual-processor Mac will become an increasingly attractive option. Users who are making their Mac purchases with long-term use in mind and who place a premium on performance would be foolish not to consider a multiprocessor machine, because eventually every significant Mac application will switch to OS X.

Even without these programs, though, dual-processor machines boast certain advantages. An MP system sports two cache buses and double the cache size of a single-processor Mac. It also boosts performance by efficiently running multiple apps at the same time.

Mac users have heard about the wonders of multiprocessing for years. The arrival of OS X 10.1 may finally mark the beginning of MP's glory days, especially for high-end Mac users. But with more OS X-native and MP-enabled applications slated for the future – and multiprocessor machines with CPUs that top 800MHz sure to follow – it will take time before a majority of Mac users are seeing double. **MW**

Matthew Honan

STUART BRADFORD

Twin engine

● Best results in test.

			Adobe Photoshop 6.0.1			
	Quake III *	Guassian Blur	RGB to CMYK **	Unsharp mask	iTunes 1.1.2
Mac OS 9					
Apple Power Macintosh G4/800 DP	95	3	14	5	37
Apple Power Macintosh G4/867	107	5	12	6	47
Mac OS X					
Apple Power Macintosh G4/800 DP	108	4	15	4	36
Apple Power Macintosh G4/867	70	6	15	8	46
	Longer is best	Shorter is best	Shorter is best	Shorter is best	Shorter is best
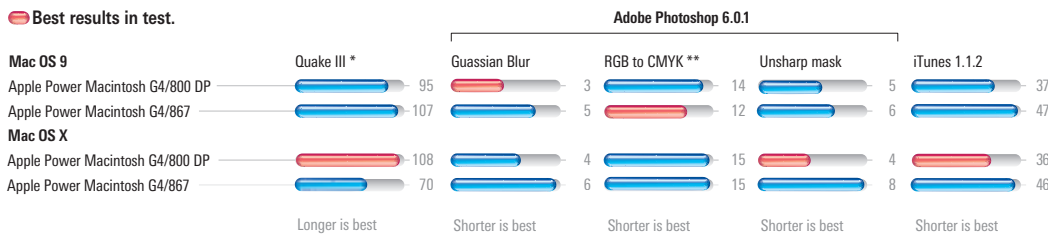
* Running in OS 9, Quake III is not multiprocessing savvy. ** Non-MP-enabled filter. Photoshop 6.0.1 is not OS X native, so it was run in Classic mode.

Macworld Lab testing by Ulyssis Bravo.

For the information as it happens visit Macworld Online Daily News (**www.macworld.co.uk**)

FileMaker's Unlimited Web

FileMaker has released FileMaker Pro 5.5 Unlimited. The application includes the full functionality of FileMaker 5.5 – including OS X compatibility, Aqua interface support, and ODBC (Open Database Connectivity) for exchanging data. Interface and data fields are customizable in FileMaker 5.5, which handles a variety of data records, including contacts, video, images, and graphics.

The FileMaker Pro 5.5 Unlimited package offers workgroups the tools they need to share and publish databases over the Web. Once in place, users can access the database using a Web browser. The Web-based databases are searchable, updateable and records can be added using a browser. The package contains the Database CGI, Web Server and FileMaker 5.5 application.

Server selection
FileMaker Pro 5.5 Unlimited's Web Server Connector has been improved, so the FileMaker database can integrate with a wider selection of Web servers. This version also provides SSL (Secure Socket Layer) support. FileMaker Pro 5.5 Unlimited may also be used with a wide variety

of middleware applications, CGIs and application servers for large-scale implementations.

FileMaker claims that when databases are published on the Web they appear almost indistinguishable from their desktop-based cousins. The package has also been developed to make Web deployment of data as simple as possible. The built-in Web server helps make the process easier, the company claims.

FileMaker Web Server Connector is a tool for Custom Web publishing that bridges the gap between FileMaker and robust Unix servers. This is how the application is able to take advantage of SSL and server-side security technologies. Java Database Connectivity (JDBC) and Extensible Markup Language (XML) are also supported.

This version supports a record-by-record safety feature. This controls user access and usage of data. There's a number of access and security features on-board designed to make implementation of access restrictions as flexible as possible.

With additional copies of FileMaker Pro 5.5 Unlimited, it's possible to set up a RAIC (redundant array of inexpensive computers) and
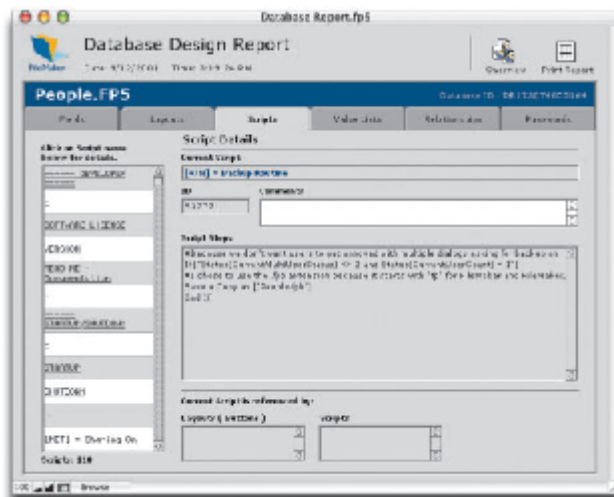
use the FileMaker Web Server Connector to distribute request processing across multiple computers.

Web-based remote administration is also supported. Macintosh system requirements for Mac OS X include 128MB of RAM and Mac OS X 10.0.4 or later. The application also supports Mac OS 8.1 to 9.1. FileMaker Pro 5.5 Unlimited costs £799 (excluding VAT). Upgrading from a previous version costs £399. **MW**

XPress 5.0 beta
Quark has released a public beta of QuarkXPress Passport 5.0 for its international users. The beta is available from www.quark.co.uk**, and will be carried on next month's Macworld CD.**

InCopy out

Announced last month, InCopy adds network and workgroup functionality to InDesign 2.0 (right), **which also ships early next year at an expected price of £450 (ex VAT). InCopy 2.0 has been developed by Adobe to aid writers and editors working in "cross-media" publishing environments.**

It's built on the Adobe InDesign page-layout program. It supports XML (Extensible Markup Language), and has an improved interface and editing tools. Adobe adds that "InCopy streamlines the layout and editing process", and claims "formatting editorial copy is simplified for designers".

Editing windows
InCopy's interface lets an entire screen be used when editing. Copy can be edited in one window, while an "accurate" view of InDesign line breaks is displayed in another.

New in version 2.0, the editing tools include a spell check and thesaurus. Tables can also be created in InCopy and exported to InDesign. In-Line Notes are also supported. These allow comments
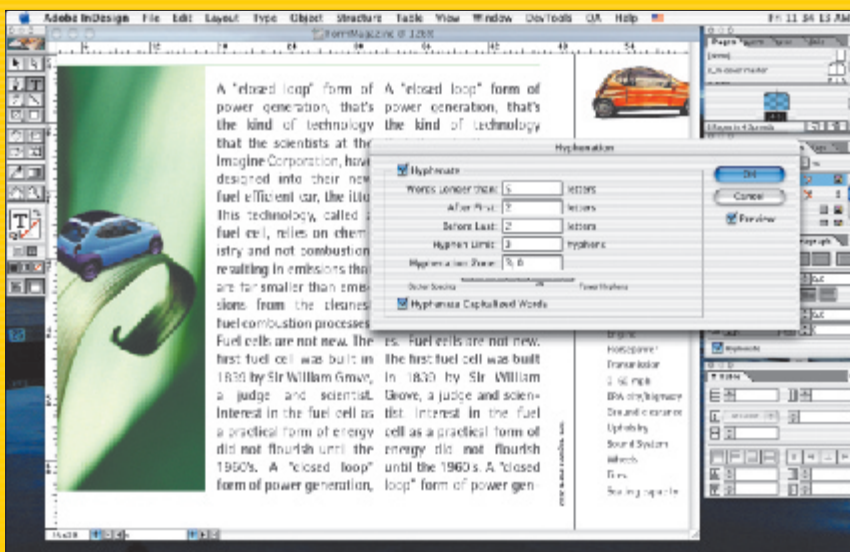
to be added to a document. The file and comments can then be exported in PDF format.

InCopy lets articles in XML be created, imported, edited and exported. XML-formatted stories created

in InCopy can be directly imported into Adobe InDesign.

No UK price has been announced yet, and the product ships early next year. **MW**

X and iDisk security threats

Apple's shift to a Unix-based Mac OS X is not without pitfalls, as reports of two serious security threats emerge in recent weeks. A serious flaw offering root access to any user's Mac is one problem; another anomaly challenges iDisk security.

iDisk is promoted as a secure repository for Macintosh user's files. However, Internet security expert OpenDoor Networks has exposed a weakness in the implementation of security.

You've been DAV'd
In OS X 10.1, Apple employs a modified form of the WebDAV protocol. Apple's technicians have engineered this to mount iDisk on Macs and PCs. This replaces Apple Filing Protocol, which Apple employed to do this job until now. The security experts warn that in doing so, Apple has exposed iDisk users to danger:

"WebDAV should not send passwords over the Internet, so it should be as secure as AFP. However, the implementation of WebDAV in Mac OS X 10.1 used with iDisk violates the WebDAV specification, and sends your password in a way that makes it easy for hackers to discover," states the report.

GEORGINA WATSON

Hackers can track down passwords over the Internet, and effectively gain read-and-write access to an individual's iDisk. Selecting iDisk from the Go menu, or clicking on the iDisk icon in the Finder makes iDisk vulnerable, according to the report.

It is recommended that iDisk should be connected in Mac OS X 10.1 by connecting to the server using the Go menu and entering the address afp://idisk.mac.com. Once logged in, users may make an alias of their iDisk or save it as a Favorite.

The second vulnerability, which potentially gave unauthorized users "root" access to an OS X Mac was swiftly repaired by Apple. The company has released Apple Security Update 1.0 – available only through the Software Update feature of Mac OS X. Without the update, applications opened from the Recent Items folder could give root access without requesting an administrator's password. **MW**

On the CD

Microsoft has released two security updates: one for PowerPoint and Excel 2001 for Mac; another for Internet Explorer 5.1.

The first – Macro Vulnerability Security – is on this month's cover CD. It addresses a vulnerability that permitted malicious code to run in Microsoft Excel 2001 or PowerPoint 2001 files without warning, potentially damaging data.

Once installed, a warning appears when Excel or PowerPoint files containing macros are opened. Microsoft warns that PowerPoint 98 or 2001, Excel 98 and 2001 for Mac are vulnerable.

Microsoft's Internet Explorer Security Update prevents Internet Explorer 5.1 automatically launching and running downloaded files. Available only through the Software Update feature of Mac OS X.

Apple faces legal action over Mac Manager name and Cube failure

Apple faces two law suits filed in recent weeks. The first legal attack comes from ELS regarding rights to the name Mac Manager. The company claims Apple "wilfully infringed ELS' trademark rights" by adopting a confusingly similar name for the same type of software.

ELS has marketed a product of that name that provides data security and management capabilities for six years. Apple now distributes a technology of the same name for system administrators and workstation management. This provides a method for Mac administrators to configure and control Macs working on their networks. It was first introduced in January of 1999.

Company president Mitchell Martin claims that Apple has "essentially put him out of business", as his company is dealing with complaints from Apple's customers, and the existence of two products of the same name also confuses the market, reducing sales of ELS' product line.

The second lawsuit alleges that CEO Steve Jobs misled investors, overemphasizing products on launch in order to inflate the company's stock value. The suit, filed by members of the Hawaii Structural Iron Workers Pension Trust Fund, claims Jobs and Apple told investors that the G4 Cube and iMac computers would sell well, according to Bloomberg. The plaintiffs claim Apple announced lower-than-expected iMac sales and G4 Cube production problems – but did so after company executives sold 370,000 shares for $22million. This litigation has achieved class-action status for all investors who purchased shares July 19 and September 28, 2000. **MW**

Peter Cohen

Land of the Giants

Giants: Citizen Kabuto – the first major commercial title for Mac OS X only – has been released in the US. No UK release date has been set, according to distributor Softline (01883 745 111).

Giants is a real-time 3D game, where creatures battle for dominance of a fragment of planet that's hurtling through space. Three races vie for supremacy: the giant Kabuto, the Sea Reapers, and Meccaryn.

'We fear', the Reapers

Kabuto is a solitary giant who rules the land. He's a lonely figure, possessive of his home to the point of killing all intruders. Sea Reapers once ruled the island but fled in fear of Kabuto, who they had created to protect against alien attacks. Ultimately, he turned against his creators.

The Meccaryn are five cockney space aliens: Baz, Tel, Reg, Gordon, and Bennett. An annual lads' holiday on Planet Majorca sees them attacked and swallowed by a Giant "Gibbon"
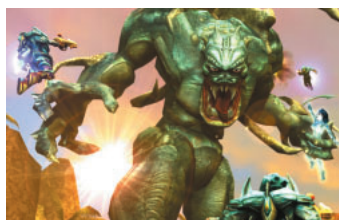
Fish. After escaping they stop to make repairs on Kabuto's island.

Mark Cottam, president of game publisher MacPlay, said: "The talented engineers at Omni Group have implemented symmetric multiprocessing support into Giants, so the game takes advantage of this feature when run on dual-processor Power Macs.

"Playing Giants on a dual-800MHz Power Mac G4 with Mac OS X and a GeForce3 graphics accelerator will be the best gaming experience one could enjoy on any platform," he added.

Ron Okamoto, Apple's vice president of worldwide developer relations, said: "MacPlay's Giants is

stunning in every way, and we are excited to have it as the first game exclusively for Mac OS X."

The already available PC version was declared one of the top-five games of 2000 by Voodoo Extreme. It became Game Guru's Game of the Year and Action Game of the Year. No price is available at this time. **MW**

Empire building, and magic ice adventure

Bold has released **Age of Empires II: Gold Edition**. The real-time strategy game runs on Mac OS X and 9. It spans 1,000 years from the fall of Rome to the Middle Ages. Players command one of 13 civilizations aiming for world domination.

Civilizations are developed with historically based strengths and weaknesses. Vikings do well on water, but aren't so well adapted to land travel, for example.

There are story-based campaigns, including William Wallace, Joan of Arc and Genghis Khan. The William Wallace learning campaign for new users puts players in command of Scottish highlanders in a war against better-equipped English aggressors. The action starts after the fall of Rome, and players begin with a town centre, villagers and cavalry unit.

New features include the option of negotiating victory through trade and diplomacy. A market-based economic

system offers chances to buy and sell resources. Players must develop and research technologies. Over 100 technology nodes are available – and accomplishment in these can ease the path to victory.

Maps are larger in this version allowing more options for extended multiplayer play. Age of Empires II: Gold Edition for Macs costs £39.99.

Monster Mac

Icewind Dale (£39.99; Softline, 01883 745 111) ships in January from Interplay division, Black Line Studios. The title takes its name from Robert Salvatore's successful book trilogy of the same name. It's a dungeon adventure mainly, but also with landscapes, mountain passes and glacier caves to explore. Players collect magic items, and battle monsters as they struggle to survive. Icewind Dale employs BioWare's Infinity Engine, the same game engine as employed in Baldur's Gate. **MW**
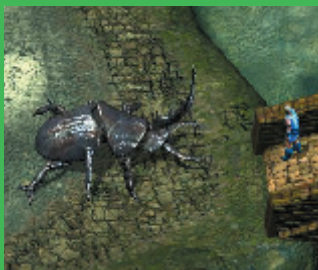
On the CD

Alien Nations comes from Shogo: Mobile Armor Division publisher, Titan. It's a real-time 3D strategy game similar to traditional "god" games. Organized into campaigns, players start with a nation and a tiny population. The challenge is to build a population sufficient to ward off hostile attacks from alien races. Races must gather resources, develop science, engage in trade, and communicate with each other. Multi-player network gaming is supported.

Alien Nations requires a 266MHz or faster Power Mac, 96MB of RAM, and 200MB of virtual memory. A graphics card with 6MB of dedicated video RAM is recommended for best results. The full version ships in early November. MW

Macromedia sues Adobe… again

- **Apple is applying Euro pricing for all its products inside the 12-country Euro-zone. It enters full circulation on January 1, 2002.**
- **Philip Schiller, Apple's vice president of Worldwide Product Marketing, has resigned from US ISP EarthLink's board of directors to focus on Apple.**
- **Motorola posted a net loss of $1.4 billion for the third quarter of 2001. Sales at $7.4 billion were 22 per cent lower than the same quarter last year. Sales totalled $22.68 billion in the first nine months of the year.**
- **RAM manufacturers face lower than predicted sales in 2002, according to Dataquest. The industry is expected to shrink to $8.5 billion next year – from $31.5 billion in 2000. Third-largest manufacturer, Hynix Semiconductor, is on the verge of bankruptcy, reports claim.**
- **Toast publisher Roxio exceeded second quarter 2002 expectations, with net revenues of $30.5 million ($2 million income). This contrasts with a net income of $6.4 million in the year ago quarter.**
- **Lexmark reported a 5.9 per cent increase in Q3 earnings, but still plans to cut 1,600 jobs in its fourth quarter.**
- **Media 100 has finalized the $16 million all cash sale of its streaming-media software assets to Autodesk's Discreet division. Discreet is purchasing CineStream and Cleaner families of streaming-media products.**
- **Macintosh reseller Micro Anvika will open a store in Selfridges Technology Hall on November 15. The full range of Apple products will be available in the store, which is on the lower ground floor of the Oxford Street branch of Selfridges.**
- **ATI Technologies has reported revenues for the fiscal year 2001 declining by 19.1 per cent to $1.04 billion, due to the global slowdown in PC sales.**
- **Sales of personal computers continued their slide in the third quarter of 2001, with shipments falling 11.6 per cent year-on-year to 30.7 million units, according to researcher Dataquest.**

The year-long courtroom war between Macromedia and Adobe has heated up with Macromedia launching fresh legal action against its graphics and Web rival, claiming ownership of technologies employed in Adobe Photoshop and GoLive.

The suit (case number: C01-3940) alleges that Macromedia owns 1998-patented technology used in both Adobe applications. Macromedia acquired the patents from NetObjects during the summer.

US Patent number 5,845,299 relates to a draw-based editor for Web pages. The second (US Patent 5,911,145) relates to a hierarchical-structure editor for Web sites.

Macromedia accuses Adobe of infringing the patents by: "Making, using, marketing, selling, reselling, offering for sale, and/or inducing others to use, software for creating and editing Web pages including, without limitation, Adobe GoLive and Adobe Photoshop."

Photoshop is a crucial application for Adobe and the Mac industry. Its absence from the roster of currently available OS X applications is an excuse for many to delay their personal migration to Mac OS X.

Macromedia is asking the court to prevent Adobe selling Photoshop, as well as demanding damages.

Tit for tat

Relations between the companies have become increasingly tense, with Adobe even promoting its open-source Scalable Vector Graphics (SVG) format above Macromedia's Flash, the accepted industry standard for vector-graphics online. Responding to the charges, Adobe announced its belief that Macromedia's claims are "without merit" and that it plans to "defend itself vigorously" in the courts.

Historically, Adobe filed its own suit against Macromedia in August, 2000, claiming Macromedia had infringed against a 1996 patent for "Tabbed Palettes". Regarding this, Adobe president Bruce Chizen thundered: "Adobe will not be the research and development department for its competitors. Our patent and other aspects of our user interface are key to the user experience and functionality of our products; they are essential to differentiate our products and brand from others."
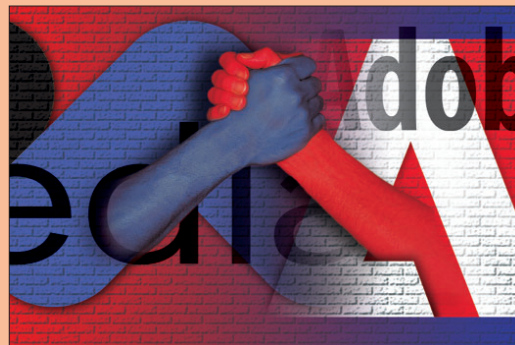
Macromedia condemned this litigation as "without merit", "invalid" and "unenforceable". The court has not yet issued its own decision on the matter.

Macromedia's response was to launch a counter suit in September 2000, alleging Adobe's infringement of several of Macromedia's patents. Macromedia wanted Adobe's use of these patents to be blocked, and an award of damages.

Macromedia recently announced its second quarter 2002 results. It noted revenues of $87.1 million – but a net loss of $3.3 million. This contrasts with revenues in the same period a year ago of $98 million, and a net income of $19.4 million.

Protect and survive

Macromedia CEO Rob Burgess discussed the "tough economic cycle," and said his company remains excited about the future of the Web. The company anticipates third-quarter revenues to be flat to down 10 per cent.

It's engaged in reducing costs and hopes to return to profitability next year. Macromedia has also adopted a stockholder rights plan, designed to protect the company against any "future unsolicited attempt" to acquire the company. The company said that this was not in response to any immediate threat. **MW**

Jonny Evans

Mygate casualty of IT downturn

Long-established family-run Mac and PC reseller, Mygate Ltd, entered into receivership on Tuesday, October 2. The firm closed all its operations on that day. The company's assets, including its South-east London premises, customer database and trading name have been sold to Apple reseller Cancom by receivers Simon Michaels and David Gilbert of BDO Stoy Hayward. Cancom took-over UK reseller Multiple Zones last year.

The Lee-based firm had accumulated debts to creditors in excess of £1 million. Insolvency assistant-manager for BDO Stoy Hayward, Mark Longbottom said: "The company went into receivership because it couldn't pay its debts."

Receiver Simon Michaels said: "Mygate was forced into receivership due to the continued adverse effects of the economic downturn and pressure on margins in the IT sector, despite posting a turnover of £6m."

It's the third casualty in Mac retail in recent years – Camelot ceased trading last summer, and Mac Supplies closed its doors last year.

A former Mygate employee was shocked at the news, revealed to staff at the eleventh hour: "We were called into a meeting, and told that Mygate doesn't exist anymore," he said.

Cancom is not responsible for furnishing unfulfilled orders taken by the now defunct company. Customers affected by this should contact the receivers. If they paid by credit-card, they can contact their credit-card company for a refund under the 1974 Consumer Credit Act.

Macworld is a member of the PPA's Mail Order Protection Scheme (MOPS), which offers limited protection for readers purchasing products in response to ads in the magazine. More details of this protection are on page 175. **MW**

Dominique Fidéle

SmartDisk off to a flier

SmartDisk has launched its new FireFly product family and updated its Titanium range of peripherals.

FireFly is a credit-card-sized, 5GB FireWire-drive in a silver case. Its dimensions are 102-x-64-x-13mm. It offers data-transfer speeds of 12MB per second, and has been built for those who need durability and a compact design. The product draws power from the FireWire bus – SmartDisk claims the power drain is minimal. FireFly is hot-pluggable. Because the product

implements the newest 12MBps FireWire bridge, SmartDisk believes its drive is ideal for video. The FireFly can save five hours of video. The £299 device is available at the AppleStore and Apple dealers.

SmartDisk has also updated its Titanium range of peripherals for Apple's G4 PowerBooks and iBooks. The range consists of the SmartDisk VST FireWire Thin Drive, the FireWire portable CD-RW drive and USB floppy drive. All Titanium products are encased in a silver-coloured shell, reflecting Apple's PowerBooks.

The Thin Drive weighs 184g, and measures 76-x-142-x-18mm. Three capacities are available: 10GB, 20GB and 30GB, at £149, £225 and £359 respectively. The SmartDisk VST FireWire portable CD-RW drive costs £239. The USB Titanium Floppy Drive reads and writes to standard 3.5-inch floppy disks and costs £54.
SmartDisk, 01252 530 960

Fire control
The 5GB FireFly drive (left) weighs just 142g. The SmartDisk VST FireWire portable CD-RW (above) drive ships with CD-authoring software and supports iTunes.

Music memory

Living Memory has released its shareware audio-application CellSynth. It can synthesize and process audio, manipulate samples, and apply automated sequencing routines. All output can be recorded to disk for use with other software solutions, such as Cubase VST, Logic Audio or Digital Performer. It also contains hundreds of preset sounds and files. The program can be controlled using any MIDI controller, or the built-in Automation Sequencer. Registration costs $65.
Living memory, www.cellsynth.co.uk

Card set for deep sleep

Village Tronic has announced MPDD+, the first Mac OS X graphic card designed to drive a second analogue display. It's also the first PCI graphics card to support the deep-sleep mode introduced with Power Mac G4 AGP computers. It supports Village Tronic's "Screendoubler" technology, which provides a panning mode offering a virtual desktop larger than the screen size of your display. This additional desktop workspace scrolls automatically. It costs £69.
AM Micro, 01392 426473

Media-eject app ships

Beyond Midnight Software has released EjectDisk 3.2, a utility for ejecting all types of disks from the Mac from within active applications, rather than the Finder. It will open and close the CD/DVD tray using Keyboard commands from within active applications, and can eject media when shutting down. EjectDisk 3.2 costs $14.95. Current users can upgrade for free.
Beyond Midnight, www.bmsw.com.au

Sethi speaks our language

In our review of Montparnasse's Sethi and the Crown of Egypt (September 2001), we noticed that some video sequences had been left untranslated. These clips have now been fixed.
Montparnasse, www.montparnasse.net

Director's Cut the sequel

Miglia Technology has released an updated version of its analogue/digital video converter, Director's Cut Take 2 (DCT2). The unit is encased in an aluminium shell, and enables users of analogue video-camcorders or VCRs to capture video directly to a hard drive via FireWire. Data can be input directly into a video-editing application.

The hardware compression chips in version 2 are more robust, and additional components have been added to reduce any artefacts, according to the company. S-video and composite video input/outputs are included. DCT2 ships with free technical support and a two-year warranty. It costs £299.

Miglia has also introduced a companion product to Director's Cut Take 2 called Media-Bank. It contains a FireWire 100GB hard drive employing the second-generation FireWire chip/board set capable of sustained 34MBps throughput. It costs £347.
Channel Dynamics, 0870 607 0540

Ricoh camera zooms in

Ricoh has launched the new £638 Caplio RR1 digital camera. It has a 3x-optical zoom lens that combines with the 3.6x-digital zoom to give 10.8x-zoom capability. Short movies can be created using the Motion picture mode that records and plays back AVI movie clips. A sound mode allows the RR1 to be used as a noise recorder. The camera has an LCD screen that rotates for viewing at various angles.
Johnsons Photopia, 01782 753 300

Yamaha CD-RW set to go

Yamaha has released the CRW-70. This compact CD-RW has a USB 2.0 connection for "high-speed" CD recording. As the USB 2.0 standard is backward compatible, the CRW-70 is compliant with USB 1.1 ports. The CRW-70 has a top speed of 12x when writing,
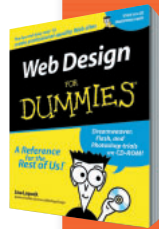
8x for rewriting and 24x for reading. The drive has SafeBurn and an MP3/Audio CD playback function. Mac CD-burning software isn't bundled with drive, which costs £299.
Yamaha, 00800 9262 4222

Mind for Photoshop
Hungry Minds has launched two books: *Photoshop Studio Secrets*; and *Web Design for Dummies*. Priced at £39.99, *Photoshop Studio Secrets* has tips and tricks for creating high-quality art. Author Deke McClelland offers insight into working with QuickTime Virtual Reality and high-end commercial art. *Web Design For Dummies* looks at how to design good-looking Web sites. There are tips on how to integrate databases within a site. Both books are available at up to a 35 per cent discount from Macworld Reader Offers. Macworld, 020 7831 9252

Rabbit masters maths
Fast Rabbit Software has introduced Master the Facts Multiplication for OS X v1.4. Master the Facts Multiplication for OS X aims to help students learn multiplication facts. The application can print the results of quizzes including score, time, date, and optionally the student's name. A version for Mac OS 8.1-9.1 is also available. This shareware application costs $9.95. Fast Rabbit Software, http://fastrabbitsoftware.com

Crocodile BETTs on kids
Crocodile Clips is launching Crocodile Mathematics at the BETT Education Show from January 9 to 12, 2002, in Olympia. Crocodile Mathematics is a maths learning resource that teaches how to link shapes, equations, matrices, numbers, graphs, text and pictures. A free preview download is available from the Crocodile Clips Web site (www.crocodile-clips.com). Crocodile Mathematics is priced at £190. Crocodile Clips, 0131 226 1511

HP printers rolled-out for winter

H P has announced four Deskjet printers and two additions to its photosmart family.

The top-end HP Deskjet 960c has an automatic paper-sensor, and integrates HP's PhotoRet III proprietary precision-technology – which overlays tiny drops of colour to create photo-realistic results, the company claims. It offers print speeds of 15 pages per minute (ppm) in black, and 12ppm in colour.

The Deskjet 940c also integrates HP's PhotoRet III, as do the 920c and 845c. The 845c offers print speeds of 8ppm for black, and 5ppm for colour.

The 960c costs £127, the 940c £84, the 920c is £76, and the 845c is £67.

The photosmart range includes the 1315 and 1115 inkjet photo-printers. These also integrate HP's PhotoRet III technology. The Photosmart 1315 has a 6cm-wide colour LCD that lets users take a look at images held on memory cards. Basic image-editing features are accessible through the LCD interface with functions such as rotate, zoom and crop. Users can use the interface to print in colour, monochrome or sepia. The 1315 prints at up to 17ppm in monochrome, and 13ppm in colour, according to HP.

The photosmart 1115 includes a range of on-body controls, such as a low-ink indicator. Like the 1315, this printer is compatible with CompactFlash and SmartMedia memory cards. It offers speeds up to 12ppm in black, and 10ppm in colour. The photosmart 1315 costs £255, the 1115 is £152.
HP, 08705 474 747

One time
One Technologies has cut the cost of its 24x HighFly CD-RW and 80GB hard drive. The 24x HighFly CD-RW has been reduced from £249 to £184. The 80GB hard drive falls to £189 from £229. Both devices have "lightweight" enclosures. The FireWire devices also implement low-power consumption. The 24x-10x-40x CD-RW ships with Roxio's CD burning solution, Toast 5. The 80GB external FireWire storage drive operates at 5,400rpm. All HighFly drives have a two-year warranty. Disc Direct, 01223 507 700

Formac's flat-panel first

Formac has released its 17.4-inch flat panel Gallery 1740 display. The first flat-panel monitor from Formac is available in two models – the Gallery 1740 ADC and the Gallery 1740 DVI/VGA. The ADC model supports Apple's all-in-one display connectivity solution, as used across Apple's monitor range. The Gallery 1740 DVI/VGA supports older Macs and PCs. Both carry two rear-mounted USB ports, and offer 17.4-inch viewable TFT (thin film transistor) screens in silver enclosures.

Maximum screen resolution is 1,280-x-1,024 pixels at 24-bit colour (16.7 million colours). The monitors offer 160-degree horizontal and vertical angles, Formac claims.

The monitors are wall-mountable. The Gallery 1740 ADC display costs £619, while the Gallery 1740 DVI/VGA display costs £649. The products both ship with a three-year warranty.
Formac, 020 8533 4040

Portable drive stores 40GB

Amacom Technologies has released the Flip2disk, its portable hard drive. It holds 40GB of data, achieving data-transfer rates almost as fast as an internal hard-drive, Amacom claims. The device ships with Mac-compatible backup software.

In the event of hard-drive failure, the Mac can be booted up from the Flip2disk. The drive is available in 10GB, 20GB, 30GB and 40GB capacities at £159, £195, £289 and £385 respectively. FireWire or USB cables must be bought separately for between £20 to £47. Amacom, 020 8993 7373

What's inside
This is the inside of the Flip2Disk; the external case is silver-coloured.

Aging State
ImageState (www.imagestate.co.uk) has launched 37 royalty-free image collections. They cover topics such as: people and lifestyles; concepts; business; beauty; travel; sport; and digital composites. ImageState now has 160 royalty-free image collections available on CD.

Many of the images are high-resolution 60MB files suitable for oversized and larger print jobs. There's 60-120 images on each CD. The highest resolution CDs cost £280, standard resolution CDs cost between £220 to £250. Individual royalty-free images are available in 1MB to 60MB file sizes, costing between £35 and £160.
ImageState, 020 7734 7344

Canon powers pics

C anon has introduced the EOS-1D (right, top), PowerShot S40 (right, bottom) and PowerShot S30 cameras. The EOS-1D has a high-resolution 4.15-megapixel XL (eXtra Large) CCD capable of creating 11.7MB files. It offers continuous shooting speeds of eight frames per second in either Single Shot or AI Servo mode.

The camera uses CompactFlash for image storage. It offers a range of shutter speeds – up to 1/16,000 of a second. The flash can be synched to 1/500 of a second. The camera is clad in a weatherproof magnesium alloy body, and also hosts a FireWire interface.

Other features include ten white-balance modes and white-balance bracketing functions as standard. It costs £4,680, and ships in December.

The 4-megapixel PowerShot S40 and 3-megapixel PowerShot S30 both have high-resolution 3x optical-zoom lenses. The PowerShot S40 has a 3.6x and the S30 a 3.2x digital zoom. Other features include an improved Digital Signal Processor and RGB filter for better quality images. The S40's two-tone compact metallic body has a sliding lens cover and full manual and automatic SLR type controls.

Available now, the £549 PowerShot S30 and £649 S40 have 13 shooting modes and three Automatic Focus modes. Both cameras can capture short bursts of movies with sound.

The units ship with Canon's ZoomBrowser, PhotoStitch and PhotoRecord plus ArcSoft PhotoImpression and Video-Impression editing packages.
Canon, 0800 616 417

MOTU music Fired up

Mark of the Unicorn (MOTU) has posted updated drivers for its 828 FireWire audio interface. The interface can now connect up to four 828 interfaces to FireWire-equipped Macs. Each interface delivers 18 channels of 24-bit, 44.1 or 48KHz digital audio input to – and output from – the computer. MOTU 828 expansion is supported on all G4 Power Macs equipped with an AGP graphics card slot as well as FireWire-equipped laptops – including the iBook, Pismo PowerBook G3 and PowerBook G4 models.
Motu, www.motu.com

NEC's Diamond
NEC-Mitsubishi has launched the £609 22-inch CRT Diamond Pro 2060u monitor. It has a recommended resolution of 1,600-x-1,200 pixels at 85Hz. An optional Mac adaptor cable is available.
NEC-Mitsubishi, 020 7202 6300

MouseMan hits the road
Logitech's optical MouseMan Traveller costs £39.99. It's compact and has a silver-metallic finish designed to complement Apple's PowerBook G4. Rather than being a miniature version of a standard mouse, it's been designed as a compact mouse for full-sized hands. It has a centre-mounted scroll wheel, and connects to the Mac using USB. The mouse includes Logitech's WebWheel software, and ships with a carrying pouch and one-metre cable. Logitech, 01753 870 900

Fetch chases Mac OS X
Fetch 4.0.1 is available now. This version is fully compatible with Mac OS X 10.1. It's a free upgrade from 3.0.3 or 4.0. It maintains all the new features introduced in version 4.0, including full Mac OS compatibility and drag-&-drop transfers between servers. The application will also resume downloads should Fetch quit. Fetch 4.0.1 costs $25. Fetch Softworks, http://fetchsoftworks.com/

Mind your language
Xorsis.com's Language Assistant 2.5 is a language-translation and dictionary application offering access to three different translators. It supports translation between 29 different languages, and allows access to eight online dictionaries courtesy of www.dict.org. Users can add other dictionary servers. This release adds support for 12 more languages, and supports and displays any alphabet. Registration costs $19.95. Xorsis, www.xorsis.com/software/lang_asst

Flash card reader
The Lindy USB Card Reader accesses data stored on Compact Flash, SmartMedia and MicroDrive storage cards. The hot-swappable USB device is available now, and costs £34. It's compatible with Mac OS 8.6-9.2.1; drivers are unavailable as we go to press. Lindy, 01642 754 000

Apple updates

Several updates for non-US Macintosh users are available this month. The **iMac Power Management Update 1.1** is for iMacs announced at the Macworld Expos in San Francisco and New York this year. Once the update is installed, the iMac will maintain its PRAM settings for a longer when disconnected from AC power.

Firmware Update 4.19 for G4 Cubes and slot-loading iMacs improves start-up in Mac OS X, as well as FireWire target-disk mode, network start-up, gigabit networking, and system stability.

The **iMovie 2.1.1** updater makes the application more stable. Apple has also released **iMovie Plug-in Pack 2.1.1 for Mac OS X**, a collection of effects, transitions and titles.

For network managers, the **Macintosh Manager 2.0.3** update for English installations of Mac OS X Server 10.0.4 will install the latest version of AppleShare Client and administration software.

Third-party updates

CatDV2.0.2_Patch
This OS X update is for Square Box System's tools for logging and cataloguing digital video. It fixes various bugs, and a problem where importing an EditDV project might not create thumbnails for some clips.

Conflict Catcher 8.1 Update
Casady & Greene's extension-management and conflict-identifying solution gets Mac OS 9.2.1 support and additional file definitions.

Dantz Retrospect 4.3 Driver Update 2.3
This updates Retrospect or Retrospect Express to support new drives, fixes bugs, and works around problems.

Nisus Writer 6.0.3 updater
This fixes a bug that prevented headers and/or footers from displaying in the Layout Page window, and from being printed. Nisus Writer is a multilingual word processor for Mac OS.

Speedy Phaser 'hits 40ppm'

Xerox has announced its "stunningly fast" A3 monochrome laser printer, the Phaser 5400. The 5400 printer can churn out 40 pages per minute, with a first-page turnaround of just nine seconds, according to the company.

It's aimed at medium to large workgroups, and has dedicated network features.

The Phaser 5400 also features a built-in 266MHz PowerPC G3 processor equipped with 32MB of RAM. The maximum memory supported is 192MB. The standard configuration offers USB and parallel connectivity, with 10/100BaseT Ethernet.

The laser printer offers a resolution of 1,200-x-1,200dpi. Printer languages supported include Adobe PostScript 3, PCL5e, PCL6 and a variety of emulations. The printer works with all current Mac operating systems, including Mac OS X. It also supports most varieties of Unix (including Linux) and Windows.

Print management comes courtesy of Xerox's CenterWare Web network-management system. The company describes this as an "advanced enterprise-wide printer-management tool that enables the easy installation, configuration and trouble-shooting of all the printers on a network". This solution integrates CenterWare IS, which offers the same functions and remote printer-management through any Web browser.

Other standard features include: edge-to-edge printing; secure printing; watermarks; and booklet printing.

Three models are available. The £1,957 Phaser 5400N is the basic model, with all the features described. The £2,445 5400DT adds an additional 500-sheet A3 paper feeder and duplex printing. Finally, the £3,386 5400DX has 64MB of RAM installed, duplex printing, two additional 500-sheet A3 paper feeders and an internal hard drive.
Xerox, 0870 241 3245

Fed up
The Phaser 5400 supports paper sizes up to A3. It has a 650-sheet tray as standard – expandable to 3,250 sheets using extra trays.

HP camera adds status

HP has upgraded its digital-camera range, introducing two entry-level units and one high-end. The photosmart 318 offers 2.3-megapixels, 2x digital-zoom and a 1.75-inch colour LCD (liquid crystal display). The unit also has automatic exposure control, red-eye reduction, automatic flash and a status display.

The 2.3-megapixel photosmart 612 offers all the features of the 318, with the addition of a 2x optical-zoom for a total zooming capacity of 4x. The 3.3-megapixel Photosmart 715 (left) offers 3x optical- plus 2x digital-zoom. Images are stored on a 16MB CompactFlash card. It offers auto exposure, red-eye reduction and automatic flash, and has an optical viewfinder. It's got 30-bit colour depth and captures images at a maximum 2,048-x-1,536 pixels.

All three cameras ship with a USB cable for downloading images to the computer. Each HP camera also comes with HP's own easy-to-use photo-imaging software. The HP photosmart 318 costs £153; the photosmart 715, £298; the photosmart 612, £212.
HP, 08705 474 747

Eizo bets on CRTs

Eizo has launched three CRT monitors. The 17-inch £299 T565's recommended resolution is 1,280-x-1,024 pixels at 85Hz. Maximum resolution is 1,600-x-1,200 at 75Hz.

The £509 19-inch CRT FlexScan T765 supports a recommended resolution of 1,280-x-1,024 at 100Hz. Its maximum resolution is 1,600-x-1,200 pixels at 90Hz.

The 21-inch FlexScan £659 T965, has a maximum resolution of 2,048-x-1,536 pixels at 80Hz.
Avnet, 01483 719 500

David Fanning

Microsoft XP may be the latest operating system the software giant has to offer, but it still lags behind Mac OS X
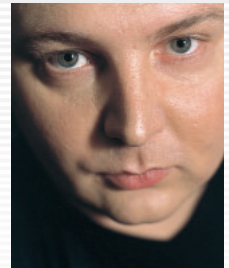
Taking the P out of X

By the time you read this, you'll no doubt have been touched by the massive billion-dollar launch of Windows XP (pronounced XP not 10P as you might think). Regular readers know I'm a fan of Microsoft. I love all the software Microsoft makes for the Mac. As for the operating systems, I have a live-and-let-live attitude. I don't mind Windows users, as long as they don't expect me to use their operating system. It may be true that I secretly pity them, but I would never be so rude as to say that to their faces.

So, should we be worried by the latest operating system from my favourite evil empire? Well, I'm not about to rush out and buy it, and chances are you won't either. Unless you're in a situation where other people decide what operating system you use, there really isn't anything to worry about.

Actually, XP represents the pinnacle of flattery for Apple – at least since Windows first appeared. Some of our younger readers may not be aware that the Windows operating system is based largely on the Apple operating system. The Apple OS was of course originally inspired by work going on at Xerox PARC, but Apple paid for the privilege. This is rather different to the way Microsoft was inspired by the Mac OS. Notoriously, Apple sued Microsoft for stealing the look and feel of the Mac OS. The suit was no match for the legions of Microsoft lawyers, and Apple lost the case. This was an important turning point for both companies. From that point on, Microsoft had free reign to rip off Apple ideas. So it did.

To be fair, the Windows operating system has been transformed since 1995. Windows 95 then 98 were a lot less ugly than the initial versions. When Windows 2000, ME (Millennium Edition) and whatever other versions started appearing, I sort of lost the plot for a bit. I'm sure Windows devotees will be able to set me straight, but from where I was standing it was confusing. At some point, Windows NT was renamed and offered for non-workstation users. I'm not sure whether it's the Millennium Edition or Windows 2000 that is the newly named NT. Ask a Windows user, see if they know. Though you'll probably find the vast majority of them are still using Windows 98 at best, and may not have even heard of Windows ME.

So how come Microsoft is hoisting XP (both Pro and Consumer) on an unsuspecting public so soon after releasing a handful of other versions? Well, we don't have to look too far for one reason: Mac OS X. It must really scare Microsoft to see OS X. It's so compelling that our beloved Aqua interface has been aped by Microsoft's Luna interface in XP. Even the name XP, seems a little derivative.

So what's under the hood of XP? The first thing you see when you start XP is a screen that allows different users to log-in. Sound familiar? Yes, multiple users á la X is now available on Windows. Another highlighted feature is the Windows Messenger application. You'll also find MSN Messenger in the latest version of Office for Macintosh, so we aren't losing out there. However, Microsoft has video conferencing and voice over IP built into the operating system, which is pretty cool. On second thoughts, I have tried both on the Mac, and the novelty wears off pretty quickly. Video phones have been around for a while now, but the only person that needs one is John Simpson.

Another "new" thing in XP is drag-&-drop CD burning. "Its as easy as saving to a floppy disk." Yes, they still use floppy disks. It has simple networking, support for digital cameras, and a ton of other stuff we just take for granted.

So there are nice gadgets, but nothing you can't do with a Mac. In fact, there is nothing of great interest to your average Joe – unless he is one of those online nudists that frequent the video-conferencing sites.

I think it's nice that Windows people are getting a look at how cool a Mac is. Perhaps people will realize that it's the PC user who has been the second-class citizen in computing all this time, not the high tech Mac people. However, it may be too little too late. OS X is already streets ahead of XP, and is bug fixed and ready for the prime time.

XP on the other hand is a confusing jumble of technologies being forced on people that have only just got Windows 98 working right. I doubt many are going to rush out to buy this new OS – they have learned their lesson.

Another thing that will mean few people are going to be moving to XP is the fact that you can't pirate it any more. A clever new activation step is required to keep XP working beyond 50 start ups. This means that the copy of Windows that the whole of China has been using will remain the OS of choice for them.

In theory, this bold anti-piracy step will mean that Microsoft will sell more copies of XP. However, I can't see many home users shelling out hard cash for this. More likely, people will upgrade when they buy a new PC. But, unlike the last couple of Christmases, PCs aren't high on people's list of things to buy. The PC industry is hoping this will spur the market back into action, and Microsoft wants this too. Frankly, I can't see that happening in any significant way.

So hats of to Microsoft, the plucky OS builder that keeps trying to keep up with the Mac. What would the Mac OS do if there wasn't a different operating system to be better than? **MW**

> **How come Microsoft is hoisting XP on the public so soon after releasing a handful of other versions? Well, we don't have to look further than OS X.**

Michael Prochak

Email is 30 years, but it's grown into just another rubbish-disseminating cog of the global system.
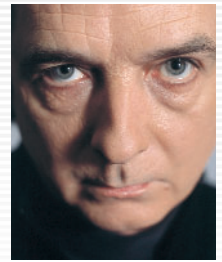
Thirty something

One of the great hippy cliches of all time was "never trust anyone over 30". Forgetting for a moment that several members of many of San Francisco's finest psychedelic groups were well over 30 in their prime, and that acid gurus like Kesey and Leary were certainly older, this phrase set the squirrels running like a bad flash-back when I stumbled on the fact that email recently turned 30.

That's right, the first successful email was sent on a stonking 300baud modem (we didn't have 'k' in those days) in October 1971 by an engineer named Ray Tomlinson who worked for Bolt Beranek and Newman, the company hired by the US Defence Department in 1968 to build ARPANET.

Ray's specific project was something called SNDMSG, which if you read it out loud, vaguely sounds like "Send Message". As it happens, SNDMSG wasn't all that great, and you could send messages only between two people found on the same machine.

@ the beginning

However, Ray eventually created a new system geekishly called CYPNET, which consisted of around 200 lines of code and the one innovation that would make history... the "@" symbol in the email name.

Now, for the historically challenged among you, the first message sent in Morse Code on May 24, 1844 was: "What hath God wrought." The first message sent over Alexander Graham Bell's telephone on March 10, 1876 was: "Mr Watson, come here, I want you." The first words to a phonograph in 1877 by Thomas Edison were: "Mary had a little lamb," and the first words said from the moon in 1969 were: "Houston, Tranquillity Base here. The Eagle has landed."

And what were the historical first words sent over email? Well... uh... we don't rightly know. Ray himself can't say with any degree of certainty what the first email message said, and, to be frank, he doesn't even remember the actual date of the first sending.

Personally, I've been using email since the mid-80s... starting with Telecom Gold, moving through Cix, Compuserve and AppleLink until consolidating with my existing Pipex account. Having email back then was a bit like having one walkie-talkie. Perhaps, in some ways, that made it seem more fun and interesting than it was.

Despite being an early adopter, I still had to fax stories to several national newspapers for years because they either hadn't got email, or had email of sorts and nobody could actually get it to work.

To be honest, I can't remember what my first email message said either. But as email has continued to grow almost exponentially, I've begun to trust it less and less. They say that the number of email addresses currently in existence is set to double to around 1.2 billion over the next four years, with the volume of emails sent on a daily basis set to increase to 36 billion in 2005. But while usage continues to increase, literacy, grammar and a sense of language has suffered. Let's face it, for the most part, the syntactic word-clusters of email aren't sentences in the usual sense. And with the advent of text messaging, our language skills are not improving.

OK... as someone who's been reading *Finnegans Wake* off and on for nearly 30 years, perhaps I have a somewhat tangential view of language. It's more fun to shy away from communicative utility and revelatory rhetoric, and still maintain a twisted poetic notion that words might be employed not just to describe realities, but to create them.

From where I sit, even though it's usually behind a Mac nowadays, email just looks like another twisted disposable cog in that phony commercial elite traditionally based on name, property and dubiously acquired wealth. It has nothing to do with a more universally neglected true and civilized version based on intelligence, talent and virtue. As Tom Robbins might say, most people simply use email to blow smoke up each others butts.

Expressing rubbish

In theory, a post-Newtonian extrabiological phenomena that allows humans to think and act using clusters of electrons should produce something memorable. The scope for expressive thought and that communication should be limitless. But what we tend to get with email is usually nothing more than a post-literate, semi-utilitarian version of Paul Simon's dangling conversation – without the poetic pretensions. And as for email's dumber sibling, text messages... well, let's just be kind and say that they rarely display Joyce's abiding interest in women, drink, high art or the operation of our own genius.

They say that email is moving rapidly towards a mission-critical system for business and without it, many organizations would find it extremely difficult to operate, or would simply grind to a halt.

They also say that only the weak and the dull of the world know where they're going, and it's rarely worth the trip. The first email message may not have left a memorable historical artifact. But as Joyce might have put it if he'd used email, it has left "all the hoolivans of the nation, prostrated in their constenation and their duodisimally profusive plethora of ululation".

MW

> '**Having email back in the 1980s was a bit like having one walkie-talkie. Perhaps, that made it seem more fun and interesting than it was.**'

Macworld reviews

Digital music player

iPod
Manufacturer: Apple
(0800 039 1010) www.apple.com/uk
Pros: Large hard drive;
FireWire interface; integration
with iTunes; unique design;
works as hard drive.
Cons: Pricey; no case/strap.
Price: £349 (including VAT).
Min specs: OS 9.2.1-X 10.1;
FireWire.
Star Rating: ★★★★/8.7

iTunes 2
Pros: Free; EQ; crossfading.
Cons: Still missing key
SoundJam features.
Price: Free
Min specs: Mac OS 9-X 10.1
Star Rating: ★★★★/8.6

Macworld LAB TEST

Fade away
*Another new feature is the ability
to crossfade tracks, overlapping
the end of one with the beginning
of the next.*

*iTunes can now also burn
MP3 CDs – data CDs with
upwards of 10 hours of music
on a single CD-R playable in some
CD and DVD players. You could
do this before via the Finder's Disc
Burner utility, but it's easier now.*

Apple's 6.5-ounce, deck-of-cards-sized iPod isn't the first portable MP3 player. What makes it different is that it was designed for Mac users and uses Apple technologies such as FireWire and iTunes.

Sandwiched in between the iPod's stainless steel back and iBook-white front is a 5GB hard drive. That's enough to hold roughly 1,000 songs encoded in MP3 format at 160Kbps. True audiophiles can even fit seven or eight complete albums in uncompressed AIFF or WAV formats.

The drive's enormous 32MB cache virtually eliminates skipping by loading songs into solid-state RAM – shaking and even banging it into things didn't interrupt smooth play. The large cache also allows the hard drive to spin down, extending battery life.

My kinda' font
Accessing your music files via the iPod is easy as well. The large screen has very crisp text – in the classic Mac Chicago type, no less. Longer, scrolling track names, however, are dim and ghosted. A bright backlight makes the information easy to see in the dark, but the background can look splotchy.

The control area is designed for one-handed use. A single button in the middle helps make selections, a scrolling jog-wheel around that navigates hierarchical menus and controls volume during playback. Four buttons on the outside control tracks, as well as backlight and sleeps modes. It's very well designed.

It's unfortunate that Apple didn't include a belt clip case or arm band, which come with some other music players – especially since the iPod is ideal for exercise use. The ear-bud headphones are stylish and provide good audio quality, but we found them too large to wear comfortably for long periods of time.

Although there are other players that work with the Mac, none has been as integrated with Apple's iTunes as iPod. In fact, the release of the iPod coincides with the first large upgrade to Apple's free player/encoder-iTunes 2.

iTunes too
The iPod can synchronize its contents with your iTunes 2 library, automatically updating itself with the latest changes to your library and playlists whenever you attach it to your Mac. You can also switch to a manual mode and pick the songs and playlists you want, or set iPod to synchronize with a custom iPod playlist.

iPod does its part to safeguard intellectual property by linking to only one copy of iTunes at a time. If you go to a friend's house (or another Mac in yours) and try to sync with that iTunes library, it will overwrite all the music on your iPod. But even iPod's copyright protection features have their limits – you can transfer MP3 files to and from iTunes by switching into manual mode.

5GB may sound like a lot of space – and it is – but it's not as much as on the Nomad Jukebox 20GB. However, the iPod uses the lightning-fast FireWire interface, up to 30 times faster than the USB and not yet available on other digital-music players.

In our tests, when copying 333 songs (1.35GB of total data), the results were impressive. A G4/450 took 4:58 minutes under Mac OS 9.2.1 and just 3:05 under OS X 10.1.

The FireWire port on the iPod does more than just allow you to download music from your Mac. Plugging in an iPod also charges its internal lithium polymer battery. (If you're on the road, you can connect the FireWire cable to an AC adaptor for a quick charge.) You can even use the free space on the iPod's hard drive to store and transfer files.

iTunes 2 adds supports for the iPod, but that it isn't a one trick pony. It adds several new features that were noticeably absent from the first version.Most impressively, iTunes 2 adds a 10-band graphic equalizer with 22 presets for styles, including rock, hip-hop, and classical – you can even save your own presets.

Some features common in other players are still missing from iTunes, chief among them different interface skins, extra visualization plug-ins, audio recording, and Internet broadcast – all features that iTunes' predecessor SoundJam MP offered.

Macworld's buying advice
An Apple portable music player sounds like a dream come true – and it is for anyone with a FireWire-based Mac and a love of music. Although the £349 price tag means a hefty financial commitment, you're getting a unique Apple product that you'll find yourself using everywhere. And with the new features of iTunes 2, the duo make a nice package.
Jonathan Seff

Apple's improved iBooks and PowerBooks make an even stronger case for portable as opposed to desktop Mac computing. Processor speeds have increased by at least 100MHz, hard drives are bigger, some system buses are hiked a notch, and other features have been added to the top-end.

A *Macworld* reader poll in October surprised us with results that pointed to an increasing shift to portable computers, despite the higher prices (caused by the requirement for smaller, cooler components, and a kind of luxury-convenience-tax to raise profit margins). Only 17 per cent of voters plumped for desktops, with 35 per cent owning or planning to buy a portable, and 38 per cent in favour of having both.

If you're considering updating your Mac or buying one for the first time, you should consider the merits of a portable. Portable Macs can do just about anything a desktop model can, with the added advantage of travelling around with you – be that in your back garden or a hotel on the other side of the world.

There are trade-offs in performance and flexibility, but nothing so limiting that a portable's advantages can be ignored.

iBook: all white
Apple's consumer portable iBook has been a phenomenal success. The main spur for sales was May's new, all-white iBook design. When the company declared its recent quarterly financial results, it announced that 251,000 iBooks were sold, contrasting with 89,000 in the same quarter last year.

The new design has clearly caught the public's imagination. Indeed, its compact shape and light weight (2.2kg) have seduced many professional users as well.

Features   The iBook's neat design is only slightly weightier than the super-slim PowerBook, its compact (28.5-x-23-x-3.4cm) body is about the size of a standard mouse-mat. Into that tidy package, Apple has included a full set of features – blowing away any consumer Windows laptops. There's FireWire and USB, 10/100BaseT Ethernet, 56Kbps modem and a slot for AirPort wireless networking. You won't find that level of features in a sub-£1,000 (ex. VAT) Windows notebook.

Screen   The iBook's sharp 12.1-inch TFT screen supports 1,024-x-768 pixels at millions of colours – exactly the same as the iMac's 15-inch CRT. The only trade-off between iBook and iMac displays is that those pixels are squeezed into a slightly smaller area – making icons and screen text smaller. Otherwise, you can get on the

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Apple's latest consumer and professional Mac portable lineup

iBook 500 CD-ROM
Manufacturer: Apple   0800-039-1010   www.apple.com/uk
Pros: Good price for Mac portable; 500MHz G3 fast enough for most applications; 128MB RAM; superb design; lightweight; compact; AirPort ready; long battery life; iTools; iTunes; iMovie, plus free software.
Cons: Lacks built-in CD-RW drive and DVD drive.
Price: £935 excluding VAT. (£1,099 inc. VAT.)
Star Rating: ★★★★/8.5

iBook 600 DVD-ROM
Pros: Great for watching DVDs on the move; 600MHz G3; 128MB RAM; superb design; lightweight; compact; AirPort ready; long battery life; iTools; iTunes; iMovie, plus free software.
Cons: Lacks built-in CD-RW drive.
Price: £1,105 excluding VAT. (£1,299 inc. VAT.)
Star Rating: ★★★★/8.6

iBook 600 CD-RW
Pros: CD burner; 600MHz G3; 128MB RAM; superb design; lightweight; compact; AirPort ready; long battery life; iTools; iTunes; iMovie, plus free software.
Cons: Lacks built-in DVD drive; CD-RW/DVD-ROM model just £60 more.
Price: £1,216 excluding VAT. (£1,429 inc. VAT.)
Star Rating: ★★★★/8.6

iBook 600 CD-RW/DVD-ROM
Pros: Great for watching DVDs on the move, and has CD burner, too; 600MHz G3; 128MB RAM; 20GB hard drive; superb design; lightweight; compact; AirPort ready; long battery life; iTools; iTunes; iMovie, plus free software.
Cons: Power users may prefer PowerBook's G4.
Price: £1,275 excluding VAT. (£1,499 inc. VAT.)
Star Rating: ★★★★★/9.0

PowerBook G4 550MHz DVD-ROM
Pros: Superb design; lightweight; super-slim; fast G4 processor; 128MB RAM; Gigabit Ethernet; widescreen 15.2-inch display; fast video card; AirPort ready; long battery life; iTools; iTunes; iMovie.
Cons: Lacks built-in CD-RW drive (available as build-to-order option).
Price: £1,599 excluding VAT. (£1,879 inc. VAT.)
Star Rating: ★★★★/8.8

PowerBook G4 667MHz DVD-ROM
Pros: Superb design; lightweight; super-slim; fast G4 processor; 256MB RAM; 30GB hard drive; Gigabit Ethernet; widescreen 15.2-inch display; fast video card; AirPort Card pre-installed; long battery life; iTools; iTunes; iMovie.
Cons: Expensive for faster processor; lacks built-in CD-RW drive (available as build-to-order option).
Price: £2,199 excluding VAT. (£2,584 inc. VAT.)
Star Rating: ★★★★/8.6

Apple's new portable Mac range

Model	Price ex. VAT	PowerPC processor	System bus	Base RAM	Max RAM	Hard disk	CD DVD	USB ports	Fire Wire	Ethernet	56Kbps modem	Graphics card	Screen type and size (pixels)	Colours
iBook	£935	500MHz G3	66MHz	128MB	640MB	15GB * (4,200rpm)	CD-ROM	2	1	10/100	Yes	8MB Rage Mobility 128	12.1"; 1,024-x-768	White
iBook	£1,105	600MHz G3	100MHz	128MB	640MB	15GB * (4,200rpm)	DVD-ROM	2	1	10/100	Yes	8MB Rage Mobility 128	12.1"; 1,024-x-768	White
iBook	£1,216	600MHz G3	100MHz	128MB	640MB	15GB * (4,200rpm)	CD-RW	2	1	10/100	Yes	8MB Rage Mobility 128	12.1"; 1,024-x-768	White
iBook	£1,275	600MHz G3	100MHz	128MB	640MB	20GB * (4,200rpm)	CD-RW/DVD-ROM	2	1	10/100/1000	Yes	8MB Rage Mobility 128	12.1"; 1,024-x-768	White
PowerBook G4	£1,599	550MHz G4	100MHz	256MB *	1GB	20GB *** (4,200rpm)	DVD-ROM	2	1	10/100/1000	Yes	16MB Radeon Mobility	15.2"; 1,152-x-768	Titanium
PowerBook G4	£2,199	667MHz G4	133MHz	512MB *	1GB	30GB *** (4,200rpm)	DVD-ROM	2	1	10/100/1000	Yes	16MB Radeon Mobility	15.2"; 1,152-x-768	Titanium

■ All iBooks ship with Mac OS 9.2, Mac OS X, AppleWorks 6, QuickTime 4, Microsoft Internet Explorer and Outlook Express, Netscape Communicator, Bugdom, Nanosaur, Palm Desktop Organizer, FAXstf Pro; Adobe Acrobat Reader.

■ All PowerBooks ship with Mac OS 9.2, Mac OS X, QuickTime 4, Microsoft Internet Explorer and Outlook Express, Netscape Communicator, Palm Desktop, FAXstf Pro, and Adobe Acrobat Reader.

■ AirPort card and Base Station available for an extra £319 (inc. VAT). AirPort allows you to access the Internet without attaching the modem cable to your Mac, as well as network Macs wirelessly.

* Apple's Double your RAM deal expires on December 31, 2001. After that RAM amount falls to 128MB and 256MB.   ** 20GB and 30GB options available on online Apple Store.   *** 5,400rpm 48GB option on Apple Store.

iBook's screen exactly what you'll see on an iMac's.

Performance   Macworld Lab's comprehensive Speedmark 3 tests show that the iBook falls behind on performance. See full round-up of Speedmark scores on page 189)

All the iMacs are faster, and the PowerBook is streets ahead on speed. But it shouldn't be forgotten that even the entry-level iBook's 500MHz G3 processor was the top professional engine behind the fastest desktop Mac less than three years ago. It's eminently up to the job – even on complex Adobe Photoshop tasks. The others are much faster, but the iBook is no slouch.

There are still four models of iBook. The entry-level model sticks with the previous low-end's 500MHz PowerPC G3 processor. This is no tortoise. In our general-task tests, the 600MHz iBook was 24 per cent faster than the 500MHz model. But most iBook users – concerned mainly with Web browsing, email, business applications, printing, scanning, etc – won't notice too much of a difference. If you're into digital photography, the extra 100MHz is probably worth going for, as image-editing is one area where the extra juice really gets noticed.

In fact, the 600MHz iBook is a superb machine for digital photographers – its portability allowing you to store, edit and post on the Web before returning home. The three remaining iBooks all use the 600MHz chip. Your choices after that step-up largely concern the type of optical drive you require.

CD/DVD   The entry-level 500MHz iBook has a CD-ROM drive, which may be all you require on the road if you have an external recordable CD drive at home. The first 600MHz iBook features a DVD-ROM drive that can do all the things a CD-ROM drive can, plus play DVD discs and allow you to watch commercially available DVD movies – perfect for long-haul flights.

The next 600MHz iBook has a CD-RW drive, so you can record CDs on the move. But it's the top-end iBook that is the dream consumer portable, with a combination CD-RW/DVD-ROM drive that can record CDs and play DVDs.

Memory   All the iBooks now ship with 128MB of RAM, which should suffice for most. Memory is so cheap today, that taking the system to its maximum 640MB of RAM would cost under £150.

A better bet for all the iBooks – especially if you're planning to try Apple's next-generation operating system Mac OS X – would be to double memory to 256MB for £15 (latest online RAM prices, as of November 1).

Hard disk   All the iBooks ship with a 15GB hard disk – except the top-end model, which includes a 20GB drive. If you're planning on some serious video editing, the extra 5GB of disk space is worth going for – although external FireWire hard drives are available as alternatives.

Price   The entry-level's £1,099 (inc. VAT) is extremely good value for such a well-featured laptop. You can add an external CD-RW drive for about £150, so – if you don't mind your CD burner being a separate unit – the slower chip option saves you £180 on the 600MHz CD-RW iBook. Nearly £200 is a lot to pay for the convenience of a built-in CD-RW drive, so that model's extra speed will have to persuade you. And the CD-RW model is just £70 shy of the combo CD-RW/ DVD iBook, so it's definitely worth spending the extra for the DVD capabilities.

The DVD iBook is only £200 cheaper than the CD-RW/DVD iBook, so the top-end combo model wins again – as it would cost £150 to add the external CD-RW drive, and you get a larger hard drive with the £1,499 iBook.

If DVD is totally irrelevant to you, the £1,099 iBook is fine. If DVD is even a

Macworld LAB TEST

Portable Macs: G4 for performance

🔴 **Best results in test.**

Mac model	Speedmark 3 Overall score	iTunes MP3 encode	Quake III Normal
PowerBook G4/667	132	71	50
iBook G3/600	99	123	24
iBook G3/500	80	156	21
Power Mac G4/867	186	46	77
iMac G3/700	119	108	34
PowerBook G4/500	114	76	26
	Longer is best	Shorter is best	Longer is best
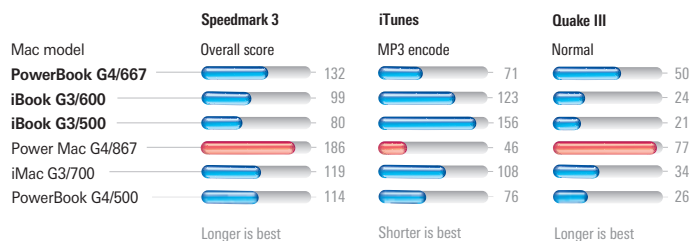
Speedmark3 scores are relative to those of a Flower Power iMac 500MHz, which is assigned a score of 100. iTunes scores are in seconds. Quake scores are in frames per second. We tested the systems with 256MB of RAM, except the iBook G3/500 which had 320. We tested each system with Mac OS X 10.1. We set displays to 1,024-x-768 (1,152-x-768 on the PowerBooks) pixel resolution and 24-bit colour. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, and converted it using the Better Quality setting of 160Kbps in iTunes 1.1.2 from the hard drive.   We ran Quake 3 v1.30b1's time demo 1 at 640-x-480 pixel resolution, with graphics set to Normal.

– Macworld Lab testing by Ulyssis Bravo

PowerBook G4: no holds barred with S-Video and infrared

Power | FireWire | USB | VGA | S-Video | Modem | IrDA
10/100/1000 Ethernet
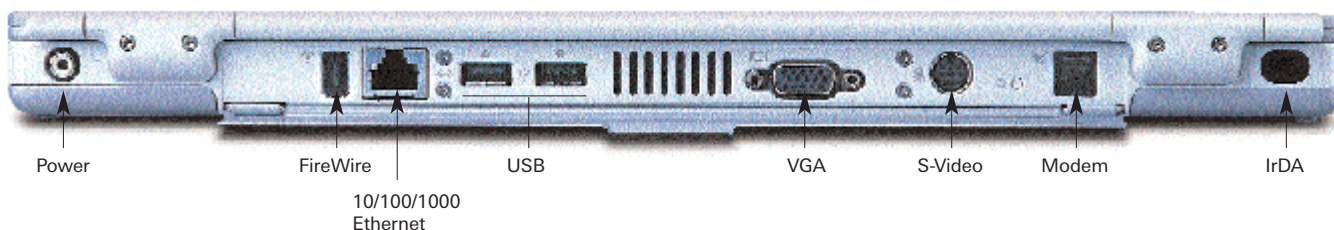
iBook: best-featured consumer laptop

56Kbps Modem | 10/100 Ethernet | FireWire | USB | VGA | Audio/Composite-Video Out (AV)
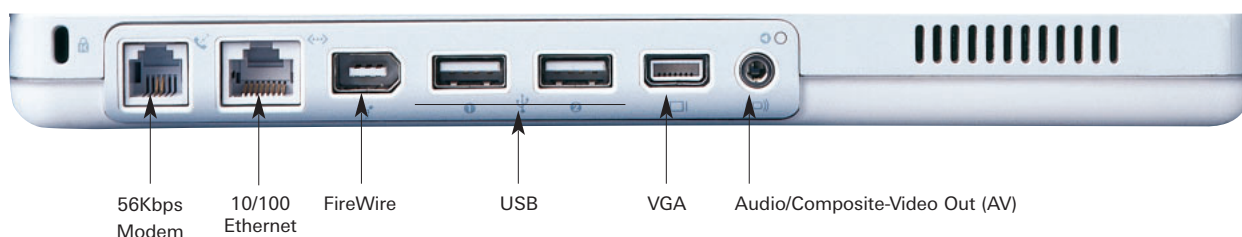
Slim pickings

The PowerBook G4 (top) is a metallic beauty in its tough-wearing but lightweight titanium shell. Amazingly, it is just an inch slim. And, even with its larger screen, it weighs just 2.4kg.

The iBook (bottom) is lighter and more compact, but professionals are likely to be swayed by the bigger screen (and ability to add a larger external monitor while back at the office), as well as by the power of the G4.

The PowerBook's S-Video is superior to the iBook's AV output, but most digital-home-movie makers won't notice the difference.

possibility, try to save enough for the top-end combo drive.

Whatever your choice, the new iBooks are compelling alternatives to iMacs – and even PowerBooks. If you can, get to London's MacExpo or your local AppleCentre or PC World, and get an iBook in your hands. It's then that this system's merits become truly tempting.

PowerBook: G4 is key

Even slimmer and lighter than the iBook (though larger in size), the PowerBook G4 (PBG4) is the best choice if you need a large TFT screen on the move and a separate even-larger monitor at the office.

Performance The PowerBook G4 (PBG4) adds a turbo drive to iBook's portable speed. As it packs a PowerPC G4, even the entry-level PowerBook is much faster than the top-end iBook. Although we haven't yet tested the 550MHz PBG4, a guesstimate based on tests of the old 500MHz PBG4 suggest that the 550 would be about 17 per cent faster than the 600MHz iBook.

The G4 is also a lot faster on programs – most notably Adobe Photoshop – that have been optimized to take advantage of its Velocity Engine's extra data instructions. While a G3 iBook can easily handle Photoshop's processor demands, the PowerPC G4 is the only choice if this is one of your key applications.

Macworld Lab tests show that the top-end 667MHz PBG4 is 33 per cent faster than the 600MHz iBook, and 16 per cent faster than the previously fastest PowerBook (500MHz G4).

However, there is still a gulf between the high-end Mac portable and the desktop Power Mac. Our lab tests point to a gaping performance gap of 41 per cent between the 667MHz PBG4 and the 867MHz

Power Mac G4. It's difficult to tell what is causing this massive difference – especially as Apple has increased the system-bus speed of the 667MHz PBG4 to 133MHz, the same as the Power Mac's.

That said, the 667MHz PBG4 is extremely fast for a portable – and, for many, that portability means a whole lot more than a few saved seconds on a Gaussian Blur.

Display The PBG4 boasts a widescreen 15.2-inch TFT display, which supports up to 1,152-x-768 pixels at millions of colours. The extra width is perfect for programs that litter the screen space with palettes and other windows – think pro-level video, image and music apps. A marked superiority of the PBG4's video capabilities over the iBook is the possibility to add a larger CRT or LCD screen (supporting 1,920-x-1,440 pixels) to the PB's VGA port. (You can add a second monitor to an iBook, but it will merely mirror the resolution of the iBook's screen – the picture's larger, but it doesn't show anything else.) Unfortunately, you can't add one of Apple's LCDs to the PB, as these require an ADC port – which is rather short-sighted on Apple's part.

The PBG4's 16MB Radeon video card offers more to graphics pros and gamers than the iBook's 8MB Rage 128, but most consumers won't notice the difference.

Features There's not much difference in feature sets between the iBook and PowerBook. What the PBG4 has that the iBook doesn't, is a higher-quality video output (S-Video as opposed to AV) and Gigabit Ethernet networking. 1,000BaseT Ethernet is undoubtedly the way forward, but is still a technology in its infancy when it comes to take-up. It's a lot faster than 100BaseT, but not ten times faster as the figures suggest – Macworld Lab tests put the speed increase at about 50 per cent.

That's still a big boost when transferring giant files, but the extra expense for kitting out a whole studio to the new standard is still delaying Gigabit Ethernet becoming the norm. Apple should be praised, however, for being the first PC manufacturer to add Gigabit to all of its pro systems.

Wireless networking, however, is becoming extremely popular, and the top-of-the-range PBG4 is now the only Mac that comes with an AirPort Card pre-installed – although all Macs have a card slot ready for the 11Mbps technology standard.

Memory Apple has a great deal on until the end of the year, whereby PBG4 buyers get double the amount of RAM pre-installed. Until December 31, 2001 the 550MHz PBG4 comes with 256MB of RAM, and the 667MHz has 512MB.

Hard drive The top-end PBG4 has a large 30GB hard drive running at 7,200rpm, compared to the 550's 5,400rpm 20GB disk.

Optical drive Both PowerBooks ship with slot-loading DVD-ROM drives. However, a slot-loading CD-RW option is available on the online Apple Store.

Price While Mac professionals will always pay top-dollar for the fastest, most capable Mac, the price difference between the 550MHz and 667MHz PBG4s is large. The extra £600 gains you a larger and faster hard drive, more memory and a pre-installed AirPort Card, but not much more than 100MHz in processor speed.

Macworld's buying advice

If you crave portability, or just want to save some space on your desk, you're in luck – Apple's portable solutions are the best on the market. Whether you go for the iBook or stretch for a PowerBook depends on your performance requirements, and which model is down to optical drive and price.
Simon Jary

'70s' synth emulator

Retro AS-1 2.1

Publisher: BitHeadz   www.bitheadz.com
Distributor: Unity Audio   (01440 785 843)
Pros: Offers a wide range of retro synth-sounds; can process live audio.
Cons: Fiddly set up; lots of windows.
Min specs: 200MHz PowerPC 604; Mac OS 8.1; 40MB hard-disk space; 64MB RAM.
Price: £195 (excluding VAT)
Star Rating: ★★★/6.4

Retro AS-1 – a software analogue synthesizer – is the stable mate of the Unity DS-1 sampler (reviewed in November). Now you can have those killer sounds from the '60s and '70s at your fingertips.

Key features include up to 128 stereo-voice polyphony, over 1,300 factory sounds, up to 96KHz sample-rate and 32-bit internal processing. You can play Retro AS-1 live or from a sequencer using OMS (Open Music System), FreeMIDI, or a native Logic interface. And, it works well with ASIO cards, ReWire, MAS 2.0 and DirectIO for audio integration with Cubase VST, Logic Audio, Digital Performer and Pro Tools. Also, any application that supports OMS or FreeMIDI names will automatically get all of the installed bank and program names.

You can also use Retro AS-1 with Pro Tools using either DirectConnect or RTAS.

The MIDI processor application lets you set up splits and layers, and has an arpeggiator (multi-note sequencer) that you can apply in realtime.

The arpeggiator can be triggered automatically or manually, and its tempo can be synchronized to the MIDI clock.

The Mixer application lets you load up to 16 sounds for playback from an external controller. Using an external MIDI-controller, you can switch between different MIDI channels, load up different patches on each channel, and then simply cycle between the channels to play the different sounds.

You can modify the factory sounds, or create sounds from scratch using the editor application. This features three oscillators – each with fifteen waveforms, such as random tuning, sync, and pan-ring modulator – and two filters.

There are also two insert effects per MIDI channel – including EQs, delays, chorus and distortion – along with two

global effects to let you add overall reverbs and delays. Retro AS-1 can also process live audio signals with its ring modulator, filters, and effects. You can even trigger MIDI notes from an external audio source.

Macworld's buying advice

Retro AS-1 is a full-featured analogue synthesizer emulation, which integrates with most Mac MIDI and audio applications. The supplied sounds give you access to many of the classic synthesizer sounds of the '60s and '70s in a very affordable software package.
Mike Collins

Magic mix
Retro AS-1's Mixer documents, containing a snap-shot of all the settings, can be saved and reloaded.

Corel Graphics Suite 10

Publisher: Corel   www.corel.com
Distributor: Computers Unlimited (0800 581 028)
Pros: Runs under OS X and OS 9; good value; decent feature set.
Cons: Rough around the edges; some interface anomalies.
Minimum specs: PowerPC G3; Mac OS 8.6-X; 64MB RAM (128MB RAM for OS X); 250MB hard-disk space.
**Price:** £399 (excluding VAT).
Star Rating: ★★★★/8.5

T he Corel Graphics Suite 10 consists of four Corel applications, Photo-Paint, Draw, Trace and R.A.V.E., plus a bundled version of Canto Cumulus 5 LE – a media-database tool. The two main applications in the suite are Draw and Photo-Paint, both of which are successful in their own right.

This release has a number of new, pro-oriented features – one being improved colour management across the board. There's new support for ColorSync and an intuitive flow-diagram management window. It would still take a lot to convince a Photoshop devotee to switch to Photo-Paint, despite the better colour management, unless the program has something really special to offer.

Face lift

The interface is as you'd expect for an Aqua-compliant application. Lots of white ribbed palettes and transparent menus. It's actually nicely designed with tool bars that can be docked or floated at the top or sides of the screen. It has a few very nice tricks up its sleave, such as effects layers called a Lens. Photoshop has a limited set of adjustment layers, but Photo-Paint lets you apply filters – such as an Sharpen and Noise – non-destructively too. Not all filters are supported – there's no blur lens – but there are the usual Levels, Curves and Hue/Saturation colour adjustment tools. While these are good, they don't quite compete with Photoshop's adjustment tools.

There is an impressive degree of interactivity in Photo-Paint. For example, as
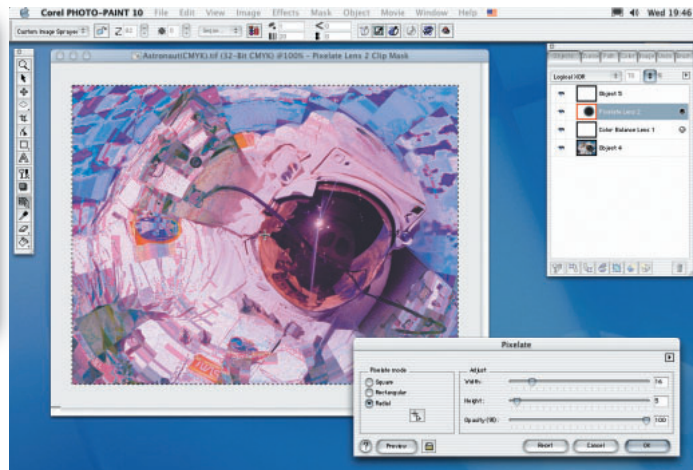
Design space
Photo-Paint is a full image-editing and painting tool along the lines of Adobe Photoshop and Painter. Layer lenses are similar to adjustment layers, but they support filters as well as colour adjustments.

you scroll down a list of Fonts, a large sample pops out at the side showing you how the typeface looks. Another example is the excellent layer-blending modes pop-up, which applies each mode to the layer type as you move your mouse through the list. Conversely, there are some problems too. Moving an object layer results in a bounding box, while Photoshop maintains the display of the object in motion. Other new features include Publish to PDF, a new Preflight engine for collating final output, and In-RIP trapping that has a full range of features for PostScript 3 devices.

Vector player

CorelDraw is the vector-drawing part of the Suite. Its main competitors, Adobe Illustrator and Macromedia FreeHand are already available for OS X. Draw feels a little slicker than Photo-Paint, and the interface is similarly well designed. Context-sensitive pop-up menus give you quick access to tools and a smooth workflow. The program has a shallower learning curve than Illustrator – but about the same as FreeHand – and there are plenty of pro-level features, such as embedded ICC profiles.

Filter effects can be applied to bitmaps too, and you can convert any vector element to a bitmap inside the current file. There is a handy Prepare Files For Service Bureau wizard that will help the less experienced when it's time to get a job printed. Again, the streamlined and easy to understand colour-management system is a bonus, and you can publish your job in PDF format or to HTML with embedded Flash for Web output.

Draw doesn't have the rich palette of calligraphic strokes that you find in Illustrator, but, like FreeHand, text handling is very good. Creating text on paths and flowing text around shapes is handled well, as is text formatting. It's also quite easy to use and learn, but when things

get complicated the enhanced preview mode is slow to update. In fact, drawing simple wireframe béziers seemed a little sluggish, too.

Trace, the third part of the Graphics-Suite puzzle can create vector artwork from bitmap images using a variety of styles. These can then be opened in Draw as the basis for further work, or to export it as an embedded Flash file for the Web.

The final application is R.A.V.E., which is basically Draw on wheels. It's a vector-based animation program that you can use to create all manner of animated graphics for Web pages and multimedia applications.

The interface is almost identical to Draw, except there is a large timeline at the bottom of the screen. You animate by adding keyframes for elements as normal, and the program supports transformations of the object as a whole or from individual points. You can also animate fills, colours and effects too for interesting results. The program also lets you create rollovers, so any object can become a button.

Macworld's buying advice

The programs in the Graphics Suite are Carbonized (as opposed to being fully-fledged Cocoa apps), which means that they can run on both OS X and OS 9 systems. In all the packages, under OS X, there is a problem with the interface fonts. They're just too small, hampering legibility.

It's a very good overall package at an extremely decent price, and will appeal to the cost conscious and aspiring pro alike. This initial release, like OS X itself, is a little rough around the edges, but the more options we have as Mac users the better. Maybe Adobe could take a tip from Corel and show its true colours as far as commitment to Mac OS X is concerned.
Simon Danaher

Drawn out
Corel's vector-based Draw is a well-designed and easy-to-use system, and – like the rest of the suite – has an Aqua-compliant interface under OS X.

KPT Effects

Publisher: Procreate   www.procreate.com
Distributor: Computers Unlimited (0800 581 028)
Pros: Creates complex-looking effects; some useful utilities; Carbonized.
Cons: Effects are identifiable; getting good results from some of the filters can take time.
Min specs: Mac OS 8.6-OS X; PowerPC; Adobe Photoshop 4.0; 128MB RAM for Mac OS X.
Price: £149 (excluding VAT).
Star Rating: ★★★★/8.1

K PT is a well-known name in the Photoshop world. It evokes pleasant memories in those of us who can recall when a drop shadow was a thing of beauty, and 3D graphics meant struggling with Photoshop channel operations.

These days, KPT is part of Procreate, the provocatively named range of products from Corel – which includes Knockout and Painter 7 as well as this new version of KPT Effects. KPT is a set of effects that can be installed in any host program that supports Photoshop-compatible filters. The CD comes with both Carbonized and un-Carbonized versions so that you can install them in any host program – whether they run on OS X or not. Applications that support Photoshop-

compatible filters include Corel PhotoPaint and Painter, as well as some 3D applications – including Bryce 5, Maxon Cinema 4D XL 7 and Lightwave 3D 7.

In all there are nine plug-ins: FraxFlame II, Channel Surfing, Fluid, Gradient Lab, Hyper Tiling, Ink Dropper, Lightning, Pyramid Paint and Scatter. As is often the case with third-party filters, how to put them to good use is not always apparent. The filters fall into two distinct categories, the utility filter and the it-just-looks-cool filter. Of the set, the most obviously useful is Channel Surfing. This can be used to add sharpness and snap to scanned images or digital photos, and it's very quick and simple to use. The other fairly obvious utility is the Gradient Lab. This can create all sorts of complex gradients, which can be used for masks or to create detailed illustrative effects. Gradient types include Shapeburst, which maps the gradient around the edges of a selection – very useful for making 3D effects. Its interface lets you blend multiple gradient layers. FraxFlame II is of the second type, and produces strange wispy fractals. The interface has been improved over previous versions, and you can now zoom and pan through the fractal, though the result is not infinite. Want to create a movie that looks like an image is flowing like a liquid? Well, now you can with Flow, which lets you save a QuickTime movie directly from the filter interface.

Scatter is both funky and useful. It

replaces tones in an image with particles – which can be simple spheres or complex images – to create custom mosaic images. You can create some interesting organic effects using this filter.

Macworld's buying advice

KPT Effects is not cheap, and like most third-party filters, they are only as useful as you make them. Lightning, which creates detailed forks of light and electric arcs, doesn't seem flexible at first. However, it provides avenues of exploration that can lead to interesting designs and ideas. At the very least they're fun to use, but pros should be wary of using recognizable filters.
Simon Danaher

Fractal frames
FraxFlame II produces intricate fractal patters that are very pretty but also very identifiable. Highly detailed flames can take a while to render too.

DreamSuite

Publisher: Auto FX   www.autofx.com
Distributor: XChange   (020 7588 5588)
Pros: Fresh effects, both odd and useful.
Cons: The interface can be fiddly.
Min specs: G3 or better; OS 9.
Price: £229 (excluding VAT).
Star Rating: ★★★★/8.6

T he DreamSuite series of Photoshop plug-ins consists only of volume one currently, though Auto FX is off to a good start with this selection.

The first thing I noticed was the slow speed. Thank goodness this was fixed with an upgrade from the Auto FX Web site.

The fix is essential as it makes the product much more useable. The interface, while pretty to look at, does have some quirks. The navigation was a little sluggish and hierarchical menus could be a little over sensitive. If your mouse isn't perfectly placed, the nested options disappear.

The effects themselves are both good fun and useful. Photoshop has been around for more than ten years now, and most of

the obvious effects have been done. DreamSuite offers some refreshing changes to the usual stuff.

There are some simple effects such as 35mm frame – which puts your image in a frame resembling a slide holder. In the same vein there is Instamatic, which is like a Polaroid frame, and PhotoBorder, which is like an aged photograph.

There are some effects that are especially suited to text, such as HotStamp, Dimension X, Metal Mixer, Liquid Metal and Chisel. HotStamp adds a fiery outline to text. Liquid Metal and Metal Mixer give excellent chrome and metal effects to text or any selected shape. Dimension X adds a high-quality embossed look, quite unlike the usual emboss filter you find in Photoshop.

More unusual still are effects such as Crease, which lets you scrunch up your image as if it had just been pulled out of a bin.

If there is one filter in this collection that is likely to be used every day it's Focus. It lets you select a part of your image and then gradually blur the surrounding area. This is terrific as an instant depth of field effect, and a great way to subtly direct attention to where you want it.

Another favourite, and I'm sure people will find ways to use it, is the Tape effect.

This lets you add different types of tape to an image, from Duct tape to clear tape.

Macworld's buying advice

There are too many effects to mention here, but they vary from the really useful to the occasional and fun ones. All the effects that I have mentioned are fully customizable and have lots of presets too. As a first volume, it's a diverse and promising start. I look forward to seeing more from Auto FX in the future.
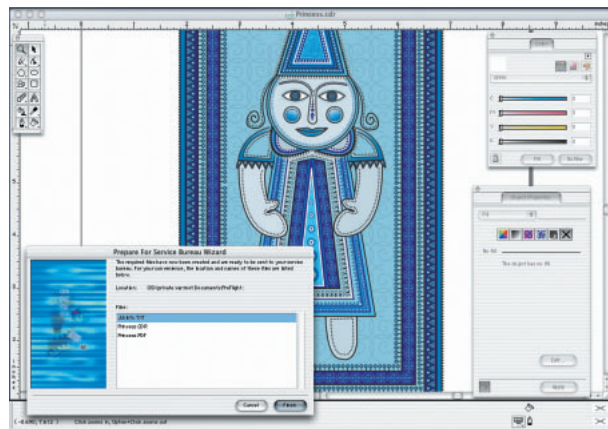**David Fanning**

In focus
The Focus filter draws the eye to the geisha in the picture, while the tape effect makes it look like a rubbish postcard.

Canon S6300

Manufacturer: Canon
(0121 680 8062) www.canon.co.uk
Pros: Full-bleed A4 and A3;
single-ink colour cartridges;
impressive colour accuracy
and photo-quality output;
Mac OS X driver available
for download.
Cons: It's no beauty.
Min specs: Mac OS 8.1; USB.
Price: £312 (excluding VAT).
Star Rating: ★★★★/8.8

The Bubble Jet S6300 prints anything from 4-x-6-inch card up to A3+ size – offering full-bleed on A4 and A3 output – and is pitched at computer-aided designers. Without having its competitors on hand, I was unable to quantify Canon's claim that the S6300 is the fastest in its class (17 pages per minute (ppm) in A4 mono and 12ppm in A4 colour).

However, manufacturer speed-claims should be taken with a pinch of salt. They are almost impossible to reproduce and don't reflect real life. The Macworld Test Centre image includes a couple of photographs and some text, which is a more realistic trial.

Out of the blocks

The S6300 is no slouch, outputting Macworld's print-test image at its top-resolution (2,400-x-1,200 pixels) in just under 3 minutes 30 seconds, which makes it the fastest A3 inkjet we've tested.

The S6300, as well as being a larger format, offers a number of technology enhancements. One is Photo Optimizer Pro, an image-correction feature that analyses hue and brightness, and automatically corrects parameters such as colour, exposure and saturation to produce optimized prints. If our test-output is anything to go by, then it works –

and with a minimum of fuss.

Unless you're a workflow colour-management expert, complicated print interfaces – such as Epson's – can be more trouble than they're worth. Canon's is simplicity itself, offering three quality-options: Text, Graphics and Photo. There is also a manual option for the pros. The test image was output on photo-quality glossy paper and the results were both colour-accurate and photo-quality. To view and download this image, go to www.macworld.co.uk/testcentre.

Canon claims that its Microfine Droplet Technology "delivers exceptional photo-quality printouts as standard across all types of papers". Most people don't care why printers work, only that they do – and I can report that the 6300 performed admirably across the board, from A3 full-bleed images on glossy photo-paper, down to 8pt-text documents on crappy old photocopying stock.

Canon's Single Ink technology means each colour is self-contained and can be replaced independently of the others, offering considerable savings.

The S6300's black cartridge costs £8.99 to replace, while the colour ones are £6.99. Compare this to the Epson Stylus Photo 1290 A3 inkjet, whose black cartridge is £17

and its all-in-one colour cartridge £19. And remember, with the all-in-one colour approach, when one of the colours is empty – yet the others still full – all have to be replaced.

Macworld's buying advice

The S6300 is a no-nonsense, high-quality A3 inkjet that does everything asked of it to a high standard. Its format also makes it a flexible solution for graphics pros who work with a variety of media. Although no beauty on the outside, beauty is only plastic deep. Mac OS X users will be pleased to know there's an S 6300 X-driver on Canon's UK Web site.
Sean Ashcroft

Ice Warrior 60GB FireWire Drive

Manufacturer: Mac & More
(01442 870 300)
www.macandmore.co.uk
Pros: Reliable; compact; fast.
Cons: Not as cheap as the HighFly range.
Min specs: FireWire.
Price: £279 (excluding VAT).
Star Rating: ★★★★/8.0

HighFly 80GB FireWire Drive

Manufacturer: OneTechnologies
Distributor: Disc Direct
(01223 507 700)
Pros: Cheap; silver design.
Cons: Failed to work in one instance.
Min specs: FireWire.
Price: £235 (excluding VAT).
Star Rating: ★★★/6.9

FireWire hard drives have always held the promise of fast, simple-to-use storage. Unfortunately, in practice they haven't always lived up to the promise – until now. These drives offer the ease of use of FireWire, plus more speed than previously available.

The difference is in the bridge – the bit that turns a common EIDE drive into a FireWire drive. In the past, the only bridges available managed just 15MBps, a fraction of the speed that FireWire is capable of. The new bridges more than double that speed, offering 35MBps. It still doesn't reach the full 50MBps capability of FireWire, but it is much closer.

Clear improvement

The drives here all use the new bridge. The Mac & More Ice Warrior (top) is more slimline than the HighFly (bottom). It uses clear plastics similar to the smaller FireLight series that have proved to be such a success for Mac & More.

When it comes to hard drives, compatibility and reliability is paramount. In theory, these drives should be compatible with any Mac with FireWire and Mac OS 9 or X. For the most part, this is true. However, the HighFly wouldn't work with one machine for reasons I couldn't fathom. The Ice Warrior seems very robust, and had no problems working with any of

the Macs, in either OS 9 or X.

One drawback with using these drives is that there is no formatting software supplied. It's good that they need no drivers, but a little software safety-net would be nice. When the HighFly is reluctant to work with a machine, there's little that can be done to fix the problem, because there were no drivers to check for or install.

Macworld's buying advice

While both drives offer similar specifications, the Ice Warrior proved more robust, with no problems running on any of the machines. The HighFly, though cheaper, had a few problems.

Both models are available with a range of drives internally – varying in capacity and RPM speeds. Different drives will offer different speeds, so performance will vary depending on the drive included. However, both are a step forward for FireWire
David Fanning

FilmBox 3.0 OS X

Publisher: Kaydara   www.kaydara.com
Distributor: Gary Taylor Graphics Domain
(01494 515 500)
Pros: Dedicated motion-capture
animation system; fast OpenGL
display; non-linear editing.
Cons: Non-Aqua interface can
be complex; awkward non-OS X
open/save dialog; dongled.
Min specs: Mac OS X; G4;
1,024-x-768-pixel monitor.
Price: $15,000.
Star Rating: ★★★★/8.6

Creating 3D animation is complex enough, but 3D characters require a special attention to detail and a specialized tool kit. FilmBox 3.0, available on Windows and Irix systems for some time, is now available on OS X. It's a dedicated 3D-character animation system aimed at the high-end user.

There are many different approaches to designing and bringing to life a digital actor. However, there are two broad categorizations that can be made depending on the look of the end result, and the intended purpose of the character.

Cartoon animation

First is hand animation, a slow but ultimately rewarding process, usually used to create exaggerated or cartoon-like movements. The second is motion capture, which produces lifelike, natural animation, because it's recorded from the motion of a real human actor. These two approaches are not mutually exclusive, and can be used together as long as you have a system that can properly handle the demands of both approaches. This is where FilmBox comes in, because it's a specialized 3D-animation system that's designed for this very purpose.

The program has a wide range of features geared towards acquiring and managing motion-capture animation data. For those unfamiliar with this sort of 3D animation, it involves a human being's motion being saved and converted into keyframe data so it can be applied to a digital character. This can take the form of a full body performance, where the actor wears a special suit containing sensors or reflective markers (depending on the type of system used) at certain positions on their body. It could also be a single glove to capture hand gestures. Even the computer mouse and keyboard can be used for very simple live-data recording.

FilmBox can interface with most of the motion-capture devices currently available, so getting the data into the computer is more or less sorted. The next step is to organize that raw data. FilmBox can map the output of each sensor to markers on a skeleton using a special template, which lets FilmBox know which sensor should control which part of the skeleton.

The skeleton can then be used to control an imported 3D-character mesh, since FilmBox is purely an animation and interactive rendering system, and is not intended for modelling. Skin mode allows you to attach a mesh to a skeleton so it will smoothly deform, and it has vertex weighting tools for precisely controlling the effect of each joint on the mesh.

Once the technical aspects of setting up or rigging the character to be controlled is completed, you can begin the process of actually recording animation.

Real-time control

FilmBox uses the concept of takes to describe each recording of an actor's movements. The beauty of the system is that data can be captured in real time – as an actor performs he or she will directly control a character within FilmBox. This makes it easy for directors to see if a performance looked good when translated to the character, and it also means that the actor can get instant feedback on how their movements look on the character.

Simply recording motion capture is only half the story, you need tools to be able to work with it, and FilmBox has these in abundance. First, motion capture data is dense – its function curves consist of keyframes at every frame – so editing them is difficult. However, FilmBox allows you to filter the function curve in order to reduce the number of keys and clean the data. This allows you to work with the animation as if it was hand-keyed. FilmBox also lets you cut and blend between different takes using its non-linear editor (NLE). This works like the NLEs in other 3D systems such as Maya's Trax, and allows you to take

multiple sequences and overlay then to create a composite. The beauty of the system is that it lets you blend hand-keyframed animation with the motion-capture data, giving you the best of both worlds. For example, you like the performance in take 10 and want to use it, but you want to exaggerate a particular gesture by increasing the rotation values of an arm joint. You can hand-key a few poses for this joint in a separate take, then blend it in the NLE with take 10.

Rendering is via a very fast OpenGL display, and the performance was excellent on a stock G4 machine. You can apply different materials and textures to objects, and there are several basic real-time shaders – very useful for broadcasting real-time 3D characters. Point Spot and Distant lights can be added, and Spotlights can display pseudo-volumetric cones in real time. You can render using antialiased OpenGL to a file, though you can also output the finished animation as a Lightwave scene file for better rendering.

Macworld's buying advice

FilmBox is an excellent system, though it can seem very complicated at times. Like Maya, it's contributing to the new chapter in 3D graphics on the Mac, and for motion capture and real-time 3D-animation, it's the only high-end solution. **Simon Danaher**

Operating constraints
FilmBox has a powerful set of constraints provided in three groups. The first are simple constraints, such as being able to link positions between objects. The second group are called Relations, which utilize a graphical interface that allows you to link virtually any parameter with any other. A Sender or parameter output can be linked via an Operator to a Receiver or parameter input so that, for example, the position of your mouse can control the translation of an object. Operators modify the data being transferred. Large and complex custom constraint systems can be built. The third type of constraint is an expression, which uses mathematical equations to create custom effects.

Alien dialog
FilmBox's interface is well structured, but unfortunately it doesn't use OS X's open and save dialogs – instead using a custom path-browser that is very un-Mac-like.
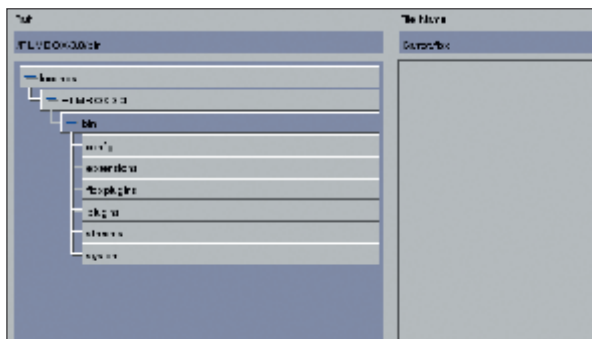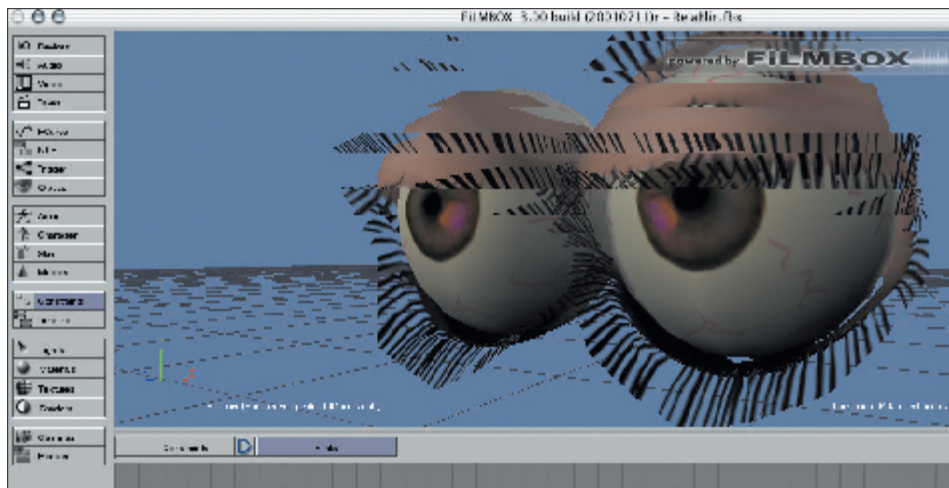
StuffIt Deluxe 6.5

Publisher: Aladdin Systems
www.aladdinsys.com
Distributor: Softline
(01883 745 111)
Pros: Wide ranging file compression and transfer options; greater Mac OS X integration; increased cross-platform compatibility.
Cons: Search Archives utility separate from main package.
Min specs: 6MB RAM; 30MB hard-disk space.
Price: £65 (excluding VAT)
Star Rating: ★★★★/8.5

StuffIt has long been the de-facto standard on the Mac, with advanced features and extra usability added with every release. Version 6.0 was no different, but although it came with the Carbonized tag, certain of these features – most notably the shortcut-utility Magic Menu – were not available under Mac OS X. Version 6.5 solves many of these problems, and adds cross-platform functions.

StuffIt Express PE, a personal edition of the file-transfer utility, covers the latter. The personal edition ships with 16 Actions to automate multiple tasks such as file compression and ftp transfers. This works by dragging items to be actioned onto custom-built drop boxes, which then perform the sequence of actions the user has previously set up. In the Enterprise Edition, you can distribute these drop boxes to clients, but here you can only use drop boxes on the Mac they were created on. This edition also has 10 fewer actions than the full version, but it's a handy addition to the Deluxe arsenal nonetheless – meaning, for instance, you don't have to mess around with stuffing files and setting them up as email attachments for regular deliveries.

Next up on the new additions front is the ability to compress files in the .tar format. This is especially useful for cross-platform compatibility. A dropper application called DropTar is included in the package, which you can place on your desktop and use in the usual StuffIt drag-&-drop fashion.

Search Archives
StuffIt Deluxe 6.5 has the ability to search archives for specific file names and types, enabling further expansion options. For example, these Palm OS files can be launched straight into the HotSync manager.

Magic Menu has been rewritten for this update, allowing Mac OS X users access to the StuffIt and Finder shortcuts from a drop down in th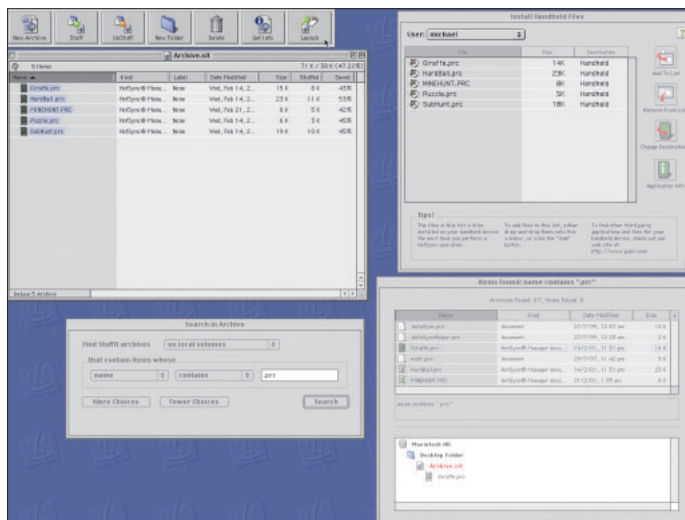e menu bar. Installing this is simply a case of double-clicking on the application and, hey presto, you have a Magic Menu to use. Any highlighted file can now be stuffed, expanded and so on without first opening up any of the main StuffIt Deluxe applications.

Macworld's buying advice

Stuffit Deluxe 6.5, as well as extending its essential Mac OS X compatibility, has many welcome time-saving attributes. There is a free version available in the form of StuffIt Lite, but if you're serious about compatible and reliable file compression, this commercial upgrade is well worth considering.
Michael Burns

ComicBase 6.0

Publisher: Human Computing
www.human-computing.com
Pros: Ample data-entry fields; easy to compile and assess personal collection; excellent Web support; frequent updates to address gaps in database.
Cons: Can't select multiple entries for inclusion in personal collection; deluxe edition offers only additional graphics and movie files, no expanded functionality.
Min specs: Mac OS 9.1.
Price: Standard, $129; Deluxe edition, $149.
Star Rating: ★★★★/8.4

In every comic-book collector's life there is a moment when, looking over a vast trove of issues at a comic shop, the question arises: "Do I own this already?" It's hard to keep track of an ever-expanding comic-book collection, but with ComicBase 6.0, the job is made easy – and fun.

ComicBase compiles the details of a comic-book collection and calculates its monetary value. But that's not all. It also includes a vast repository of comic-book information, detailing everything from comic-book titles, writers, and artists to special editions of issues. For the most part, the list of titles is both deep and wide. (There is a Deluxe Edition that includes a bonus disk with thousands of extra comic covers, video interviews, and movie trailers.)

There are multiple ways to search, and results are impressive. When I entered The Nocturnals and Zero Girl, two comics that do not have a vast following, I found entries for both. However, the die-hard comic collector will find that the list isn't complete. I recently searched several stores for a series titled Children's Crusade, that begins and ends with a one-shot (single-release only) issue, and includes annual issues from the series Black Orchid, The Books of Magic, Animal Man, Doom Patrol,

and Swamp Thing. ComicBase's database lists only the beginning and end titles. The cancelled series Doom Patrol and Animal Man weren't listed. Luckily, it's possible for the user to make additions to the database and download updates via the Web.

Because many comic-book publishers print limited runs of comic series and one-shots, keeping on top of the data is difficult. One flaw is not being able to find or catalogue a crossover issue (an issue in which the plots and characters from at least two separate series are featured in one comic). Another problem is in the way the information is displayed: while titles are typically listed by issue number and variation, it would also be useful to include the month and year, and to let users customize which fields they'd prefer to see and sort data by. At present the user cannot sort and view data.

Staying organized doesn't have to be scary. Despite the limitations of dealing with one-shots, crossovers, and limited series, ComicBase 6.0 is a useful program for tracking a collection, identifying missing issues in a series, and indicating how much issues are worth. The value that ComicBase 6.0 gives to comics is debatable, however – as it's typically more conservative than the

appraisal given by other, more expensive, professional comic-book programs.

Macworld's buying advice

For comic aficionados, the software is a worthwhile investment to aid in the building and maintenance of a collection. Navigating the interface is easy, entering and amending information is simple, and printing out collection details is straightforward.
Lisa Schmeiser

Quick film-printer

FilmMaker 4 2400 Pro

Manufacturer: Xanté www.xante.com
Distributor: Info-Tec (0870 742 0802)
Pros: The best mono printing available; can print to film; fast.
Cons: Minimal OS X support.
Min specs: Ethernet.
Price: £4,299 (excluding VAT).
Star Rating: ★★★★★/9.0

One of more tedious products I get to review is the mono laser-printer. Sure, mono lasers were integral to the birth and boom of the Mac and desktop publishing. But I find it difficult to get excited by them anymore – until this one. The Xanté FilmMaker 4 is a different kind of laser printer. It brings the highest-quality mono printing ever seen to the office. But this isn't really an office printer, it's designed to be a graphics printer through and through.

The difference between the FilmMaker and other lasers is that it is designed from the ground up for graphics. Therefore it includes the capability to print on a range of paper sizes, and media – including polyester film up to 13-x-35.5-inches.

The ability to print directly to film makes this ideal for small design, repro or print shops. While it's unsuitable for four-colour printing, it can handle single ink and duo-tone jobs easily. You can, in theory, print four-colour separations, but the margin of error is too great for high-quality work. Though for jobs where image quality is less important it will do fine.

Not any old laser printer can output on film. For instance, film shrinks as the fuser heats it. This can cause problems, unless the printer has the ability to adjust to fit, which of course the FilmMaker does. It prints a test page so you can measure this shrinking or lengthening of the printed image. Then you simply tell the printer your results, and – presto – your images are the correct size.

The FilmMaker can also adjust the density of the toner for different media. For instance, if printing on film it would be advisable to step up the amount of toner used. This thickens the letters slightly, which allows for the burnout effect when the plates are made from the film. These features are fiddly and a pain to use, but they are essential to the film-making process. Of course, the FilmMaker can do more than just film separations. Its mono output is second to none. The 2,400-x-2,400dpi resolution results in crisp lettering and smooth gradients. If you have a densitometer, you can calibrate the output easily to get accurate greyscale reproduction.

Macworld's buying advice

The FilmMaker is unlike any other mono laser-printer I've seen. The kind of quality you get from the FilmMaker comes at a price, and at £4,299 it's more expensive than some colour models. However, the unique ability to print onto film makes it worth the price tag. In fact, it could pay for itself pretty quickly if you do a lot of single-plate printing. The FilmMaker's output is as good as mono printing gets. Its speed, quality and unique features make it the only choice for desktop-film printing.
David Fanning

Fine distinction
A feature designed to improve printing both positive and negative film with FilmMaker is NEIT (Negative Enhanced Imaging Technology). This helps with the problem of fine lines disappearing when they are on a black background.

CAD and graphics app

ConceptDraw Professional

Publisher: Computer Systems Odessa
www.conceptdraw.com
Pros: Wide variety of features; highly customizable; extensive library of objects; large template resource.
Cons: Initially confusing; over-ambitious range of applications.
Min specs: Mac OS 8.6-X 10.1; PowerPC 603e or higher.
Price: ConceptDraw Pro (electronic version), $249; ConceptDraw Pro (box version), $299; Academic discounts are available.
Star Rating: ★★★★/8.1

ConceptDraw Pro is a charting, design and planning tool that has a curious way of working. If you're used to Illustrator or FreeHand, you'll get confused by the bewildering interface full of little boxes with lines and points. Jumping straight in throws you a bit too, as this is an environment where almost every tool bears more than a passing resemblance to the bézier curve creators of other packages.

However, this soon passes and you can see that this is actually quite a powerful utility, with an intuitive – rather than confusing – interface, and a pile of features to make creating diagrams a lot quicker and easier.
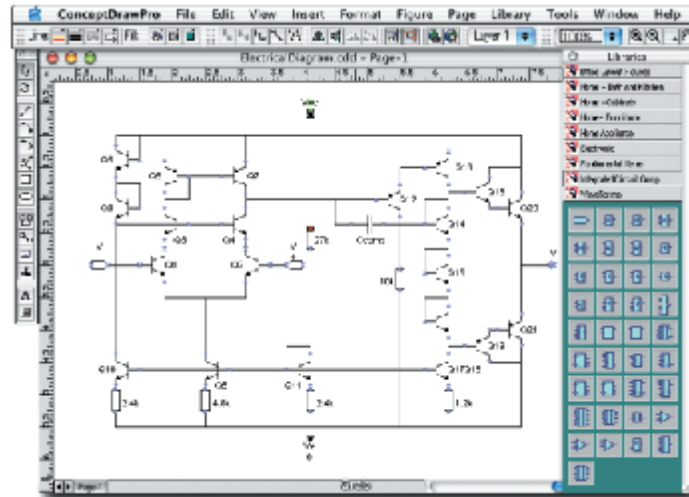
You begin using the software by creating a totally blank document and working from scratch, or you can use one of the many included templates. Templates include business plans, industrial and electrical-engineering diagrams, database and flow charts, home design and architectural layouts.

Sparks will fly
ConceptDraw provides a host of library objects for almost any type of diagram – from circuit boards to bar charts.

Dishwashers
The templates come accompanied by another powerful feature – object libraries. These include all the components that you'll need to create most everyday charts and plans. Each template pulls up a relevant library, full of things such as tasks, timetables, dishwashers and logic gates. Being vector based, everything is scaleable. You can create a component and add it to the library for future use.

Other powerful features are the import and export capabilities. Most of the usual graphics file formats are supported, as well as AutoCAD .DXF files and EPS, and ConceptDraw can import and export data to and from PowerPoint files and HTML. It also has the ability to import and export drawings as text. This may seem odd, but the text can either describe the position, relationships and attributes of the components of a drawing, or as Outline Data organized in a similar fashion to HTML – with tabbed indents for each subordinate component.

Internet integration is also built in, with the ability to send drawings by email and launch searches from the File menu. The software features URL autoparsing, a

Changing Rooms
Plan your dream home in rapid fashion.

feature that reads and assigns hyperlinks to any Web-related text string in the drawing. Hyperlinks can also be set to jump to another page of the document, another ConceptDraw document, or to launch any file or application you specify.

ConceptDraw offers four types of objects in the Mac version: figures, connectors, groups and pictures. Figures are made up of elementary segments, of which there are four types: LineTo, SectorTo, ArcTo and SplineTo. When segments are connected, they become a Geometry – a solid path that closes to form a filled shape when the first segment meets the end of the last. As line width and fill properties can be preset, this enables charts and drawings to be quickly constructed. There are also basic shape tools, such as rectangle and ellipse, and a box for text entry – all of which serve to further speed the process.

Several Geometries can be combined to form more complex figures, automatically formatted to share line and fill attributes, and show overlapping areas as transparent. This is especially useful for creating complex shaped holes in closed figures.

Objects can be snapped to the background grid to aid positioning, or glued so that all connected objects move when one is repositioned. Objects can also be aligned in a variety of directions, reshaped, resized, rotated and flipped around axes. By opening its Object Parameter Table, each object is almost totally customizable – with full access to behaviours, attributes and characteristics. Pictures can also be imported and used as ConceptDraw objects.

Connectors are another strength of the package. These are used to link two objects together even if they are moved or resized.

Connectors can be either line segments – known as Direct connectors – or Smart connectors, made up of horizontal and vertical lines. Both rebuild themselves automatically when objects are moved, but the smart connector always ensures that nothing overlaps. Basically a quick way to draw the relationships between objects in diagrams, connectors are especially useful when a revision is required on a complex layout. Any object can be converted into a connector, and multiple connections from one object are possible.

Text support, not surprisingly, is fairly extensive. As well as style, format and editing commands, there are advanced tools such as Autoexpand – which adjusts the size of an object to accommodate the text contained within.

Layers are also a useful addition to the toolset. Up to nine layers can be used in a document, providing a host of possibilities. Take planning a house layout, for example. Instead of all wiring and plumbing being visible in a single drawing, each subsystem can be assigned to a different layer, able to be viewed singly or as a combination of views. This is a key feature of advanced architectural and construction packages, so to find it in this relatively low-priced package is a big plus.

Macworld's buying advice
If you're looking for a technical-drawing tool, this package has it all. Perhaps the only criticism is that it's not focussed enough on certain disciplines. However, if your requirements are general purpose, this is a reasonable investment. It's fairly cheap, runs on Mac OS X back to 8.6, and is extremely customizable. If you're in education, it's definitely worth a look.
Michael Burns

Web guide-books

Rough Guide to the Internet (for PCs and Macs)
Publisher: Rough Guides www.roughguides.co.uk
Pros: Mindless PC sheep will have their anti-Mac prejudices reinforced.
Cons: This is only a good thing if you're a mindless PC sheep.
Price: £6.
Star Rating: ★/0.5

Rough Guide Website Directory
Publisher: Rough Guides www.roughguides.co.uk
Pros: Entertaining; time-saving guide; cheap.
Cons: May help you waste the time you save too.
Price: £3.99.
Star Rating: ★★★★/7.6

As part of my job, I advise readers on what equipment to buy, what's good, what's bad and what is ugly. It's something I take extremely seriously, which is why I was so angry when reading *The Rough Guide to the Internet*.

I hadn't got very far into the book before I realized that the "For PCs and Macs" on the cover was there purely to sucker potential Mac buyers into shelling out for it. Basically, the only mention it gives Macs is to suggest that buying one would be computing suicide.

Moronic
It includes such moronic phrases as "think carefully before locking yourself in the Apple closet" and the more gracious: "You can certainly get by with a Mac, but the Internet is overwhelmingly geared towards PC users." Thanks a lot for that. Can I have my money back now?

The Rough Guide Website Directory isn't nearly so annoying. It's a pretty good list of the sites that are useful, amusing and informative. For the most part, it's accurate. In the current financial climate, Web sites are dropping like flies, and any book about the Web can only hope to be a snap shot.

One thing that I have found lately is that there simply isn't as much Internet as there used to be. This means fun sites to look at (particularly the ones with no real revenue stream) are becoming more scarce. Having this book is a good way to browse sites with a little less randomness. There is a ton of interesting sites in this directory – such as Bert (from Sesame Street) is evil – which makes it an ideal resource to sit by your Mac and help you idle your time away.

Macworld's buying advice
The Rough Guide to the Internet should be avoided at all costs. Anybody that thinks that the Internet is there purely for PC users is missing the point. The Internet was designed to work with any computer, and the fact that a fraction of a per cent of sites don't work perfectly with Macs is irrelevant. I'm sure there are more sites that don't work with AOL or Netscape, but I don't see the author warning against that. He must have his head stuck in a very dark place indeed.

The Website Directory is a much better bet. An ideal stocking filler for the jaded Internet adventurer, it offers lots of new and interesting places to visit.
David Fanning
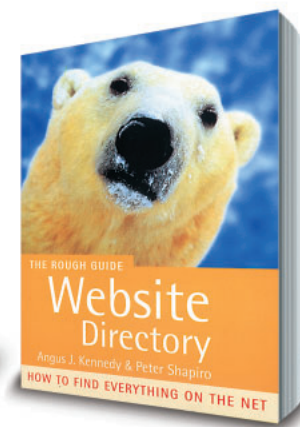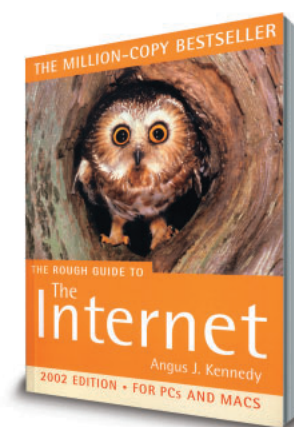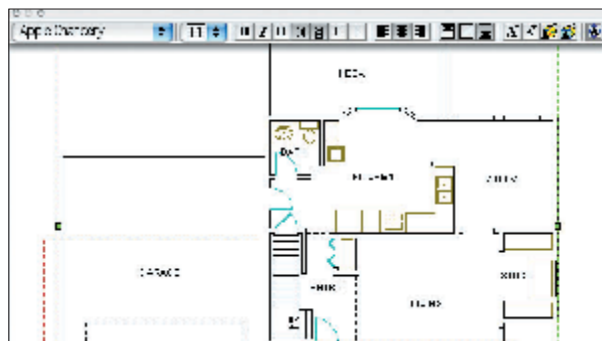
Route 66: 2001-2002 various versions

Publisher: Route 66   www.route66.nl
Distributor: Softline (01883 745 111)
Pros: Door-to-door directions (Pro and Britain versions); faster than previous versions; live traffic data; GPS support.
Cons: Complete installations can take a huge amount of disk space (over four gigabytes for the Europe Pro version).
Min specs: 200MHz Power Macintosh; Mac OS 8.5 or OS X. Route Britain, 720MB hard-disk space; Route Europe, 1.1GB hard-disk space; Europe Pro, 4.2GB hard-disk space.
Price: Europe Pro, £59.99; Europe, £29.95; Britain, £29.95. (All prices include VAT.)
Star Rating: ★★★★/8.5

The people at Route 66 have been making maps for years now. It's difficult to see how things could be improved further, because the last version worked pretty well – but they've managed it.

Having a computer-stored map is convenient, but I was wondering how the Route 66 products could compete with the online competition. After all, streetmap.co.uk and multimap.com offer maps of Britain for free, so why would you buy Route 66? Actually streetmap.co.uk doesn't offer route planning, and multimap.com can be a bit flaky on directions.

There are three new versions of Route 66. Route Britain offers street-level mapping and routes for Britain, and Route Europe offers city-to-city maps for the whole of Europe. Route Europe Pro offers street-to-street directions for Europe – though, curiously, it doesn't cover the same territory as the non-Pro version.

There are new features in all of the versions, and the maps are up to date. The Route Britain version now gives live traffic reports when you have a Net connection.

One thing that has been improved in all versions is searching for a street. The previous version used to try to pre-empt your search by throwing up matches as you type. This actually slowed the search, because it was doing so much work to pre-empt you. Now it won't search for a place until you hit return.

One thing that is missing from Route 66 is a proper postcode search. It will work on the first three digits of a postcode – so it will find WC1 without a problem – but if you type in a full postcode it won't find anything. This is something that the online map services do easily, so Route 66 should add it next time around.

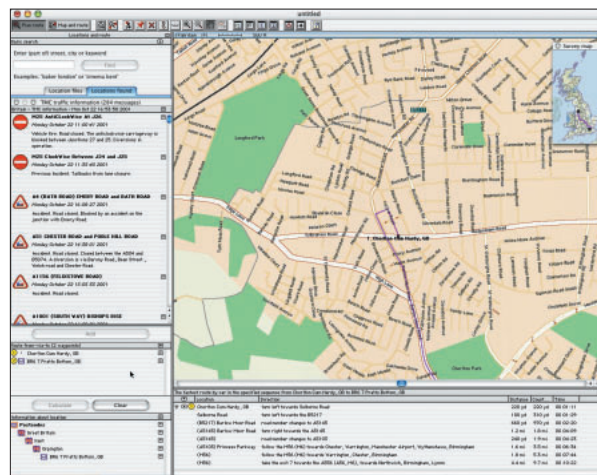One of the most confusing things about the different versions of Route 66 is the varying coverage. Route Britain is fairly straightforward, though it only covers Britain – not Northern Ireland or the Isle of Man. Route Europe, which has main roads but not all city streets, covers all of Europe and some territories beyond Europe. It includes Iceland and a load of other places I didn't think were in Europe. Just when I was getting to grips with this extended Europe, I looked at the Route Europe Pro. Confusingly, the Pro version has greater detail, but covers less territory. Now Russia is nowhere to be seen. In fact even Ireland isn't on the map. Only Britain, Germany, the Netherlands, Sweden and Denmark have full street-level maps. Portugal, Spain, France and Italy have slightly less detail.

Macworld's buying advice

There are limitations, such as limited postcode support, but it is still better than any online service. If you spend a lot of time travelling, then it's a handy thing to have around. If you are of a particularly technical nature, you can even hook it up to your GPS.
David Fanning

Wheel quick
Route 66 works out the quickest way from one destination to another. It will add time for accidents and congestion when it's hooked up to the Web.

LP630

Manufacturer: InFocus
(0800 028 6470)
www.infocus.com
Pros: Bright, versatile with good connectivity.
Cons: Heavy.
Min specs: VGA or DVI video output.
Price: £3,250 (excluding VAT).
Star Rating: ★★★★/8.2

Usually when I look at data projectors, I am evaluating the ultra portable type that weighs a kilo or two. The InFocus LP630 is at the other end of the scale though, at a hefty four kilos. The reason is that it's an extremely bright, high-resolution (XGA) projector aimed at conference rooms or classrooms.

Unlike the majority of InFocus projectors, the 630 uses LCD projection methods rather than the more compact DLP (Digital Light Processor) system. This helps keep costs down, but makes for a bulkier machine.

The one benefit of the bigger machine is the extra brightness, it can output a massive 2,000 lumens, almost double the amount generated by the smaller models. This means that even in bright environments, the image should be clear – although pulling the blinds won't do any harm.

When a projector is used in an office environment, it's likely to be used with a number of different computers. The LP630 offers a huge array of connections. There is the usual VGA connection for most computers, plus a digital connection (DVI) for suitably equipped Macs. Video and audio is also well catered for, with S-Video, composite and component video. It also has stereo audio (RCA), and 3.5mm audio connections.

The controls and connections make for an easy-to-use and practical projector. It's ideal for non-IT experts – simply plug in your source, and it will be automatically selected.

The projected image can be from 2.5 feet to a massive 25 feet diagonally in size – enough for almost everyone's needs. You won't want to lug this projector around for meetings on the road, but otherwise it's very versatile.

Macworld's buying advice

Five years ago, a projector this size would have been as small as they came. The price would have been about the same, but the brightness would have been about a quarter of the level this model has. If you're currently using an old model, you'll be amazed at the improvements that have been made. It's an excellent choice for companies that need a projector big enough for large meetings, and small enough to move from room to room.
David Fanning

Outlook 2001

Publisher: Microsoft
www.microsoft.com/mac
Pros: Fully compatible with Exchange Server; folder sharing; clean interface.
Cons: No support for HTML mail formatting.
Min specs: PowerPC; Mac OS 8.6 ; connection to an Exchange Server.
Price: Free
Star Rating: ★★★★/8.1

Macintosh users in a Microsoft Exchange community fight a constant uphill battle for compatibility with their Windows-based neighbours. Until just recently, Mac users could barely exchange formatted email messages with Windows Outlook users, let alone participate in the rich traffic of Exchange calendars, meetings, task and contact lists, notes, and document archives enjoyed by their Windows colleagues.

Those days are over. Microsoft Outlook for Mac 2001 offers feature parity with the Windows version, letting Mac users participate in group scheduling, share address books, collaborate on projects, and publish documents. It even has a few features – such as drag-&-drop copying and easy setup – that Outlook for Windows doesn't, and the Mac interface makes this version more user friendly than its Windows counterpart.

X out

There are only two real disappointments: Outlook 2001 doesn't run natively in Mac OS X – you can run it in OS X's Classic mode, but performance suffers – and it requires Microsoft Exchange Server.

Outlook 2001 is easy to install: simply drag the application folder from the CD to your hard drive, and the program self-installs when you first launch it. A start-up wizard walks you through the initial configuration, offering context-sensitive troubleshooting advice if things go awry.

Once launched, Outlook presents a single multipaned window displaying mail, calendars, contacts, and other Exchange resources. Overall, the new interface is very pleasing, even though it lacks the Aqua sheen that users are starting to expect. And, Mac-friendly features abound: message-preview zooming magnifies those insanely tiny Windows fonts, for example, and the Mac's Keychain security feature saves your password. Interactive documentation via the program's Mac Help Center is a real boon.

Behind the slick interface, Microsoft has added a mountain of new capabilities. A full-featured calendar keeps track of appointments and lets you share them with others. You can have calendar items sent automatically to other Outlook users and create public calendars for jointly managing vacation or project schedules.

A meeting planner helps you arrange meetings with multiple users. You choose several users from an address book, display a consolidated view of all their schedules, and select a compatible time or let Outlook 2001 choose one for you. All invitees get an email message about the suggested time, which they can confirm or, with permission, reschedule.

Shared folders let you delegate management of some or all of your Outlook functions to another person. A feature unique to Outlook 2001 for Mac is the Sharing Panel, which consolidates permission controls for all Outlook functions in a single dialog box; Windows users must click through dozens of windows to configure sharing and delegation.

Beyond the lack of native OS X support,
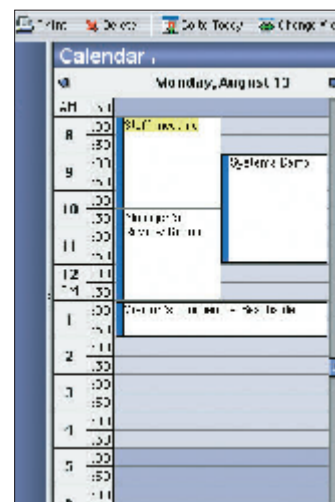
It's a date
Outlook 2001 lets you share schedules with other Exchange users.

one minor omission remains: HTML mail formatting. Outlook 2001 converts incoming HTML messages to RTF format and doesn't let you compose HTML mail messages. Windows users don't suffer this.

Macworld's buying advice

Outlook 2001 is elegant and responsive in Mac OS 9, but it drags somewhat in OS X's Classic mode, and the user interface isn't up to Aqua standards. Still, if you're living in a Microsoft Exchange corporate culture, you have to get along – and with Outlook 2001, you finally can.
Mel Beckman

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nik Sharpener Pro

Publisher: nik Multimedia
www.nikmultimedia.com
Distributor: XChange
(020 7588 5588)
Pros: Sharpens images optimally and automatically; offers profiles for different output devices.
Cons: Pro-package price will put off all but the most committed.
Price: Sharpener Pro, £229; Sharpener, £75. (Both prices exclude VAT.)
Min specs: Adobe Photoshop 4.0; Corel Photo-Paint 8.0; or Ulead PhotoImpact 4.2.
Star Rating: ★★★★/8.3

Adobe Photoshop's Unsharp Mask filter compares each pixel in an image to neighbouring pixels – the greater the contrast between two pixels, the more it increases the contrast. This results in a halo effect around edges that appears to increase an image's sharpness.

The Unsharp Mask filter can also have the undesirable effect of exaggerating texture in flat areas, noise introduced by a scanner, and artifacts from JPEG compression. Even when happy with your Unsharp Mask settings, there's still a rub. If the image is for online use, then the sharpened on-screen version will be what you get when it's uploaded. However, if it's destined for print, there'll be a difference between the on-screen version and how it looks on paper after being put through the halftoning print-process.

nik Sharpener Pro is a clever plug-in that not only automatically sharpens images optimally, but offers output profiles designed to retain that image's integrity – whether it's being output on a laser, inkjet or an offset press.

Sharpener Pro's options appear in the Photoshop filter menu, and all trigger an easy-to-use preview window. The great thing about this plug-in is that – although what it does is complex – it's fully automated.

The image-quality options on offer are optimized by default, and so will rarely need tweaking. One interesting feature is the eye-distance settings: these compensate for the distance between image and viewer (a magazine as opposed to a poster, for

Before and after
The picture on the right, which was sharpened using nik Sharpener Pro is clearly sharper than the left-hand picture.

example). There's also a printer-quality slider, that compensates for varying paper and printer standards.

Macworld's buying advice

For graphics pros who use Photoshop's Unsharp Mask, Sharpener Pro will prove a boon. However, for home use, the boiled-down Sharpener – which lacks some fine-tuning features – will prove adequate.
Sean Ashcroft
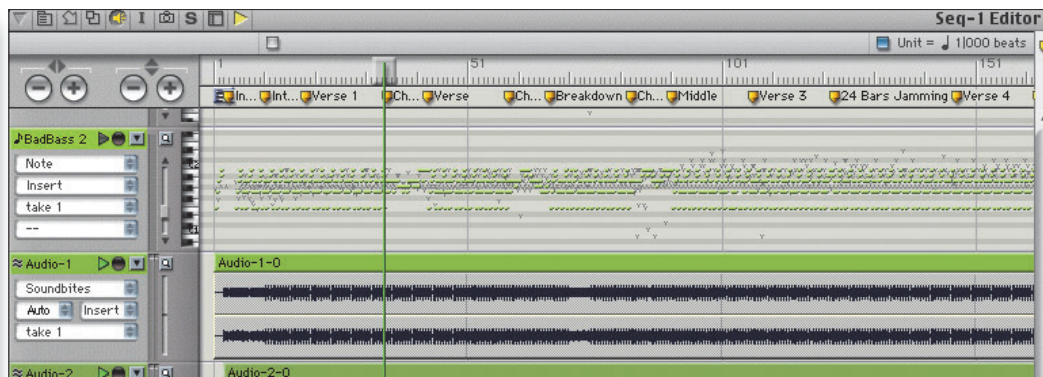
Similar sequence
The closest comparison to DP3 is Pro Tools 5.1 – as DP3's new Sequence Editor presents all the MIDI and Audio tracks in one window. This is similar to the Pro Tools Edit window, where you can view and edit all your MIDI notes, audio soundbites, audio automation and MIDI controller data. As in Pro Tools, both MIDI and audio tracks can be independently resized vertically, and you can record multiple takes into any track.

Mix master
DP3's logically laid-out Mixing Board incorporates just about all of the features you'll find in Pro Tools – although some of these are positioned or accessed a little differently. You also get Window Sets, an Input Quantize window, and a Tool Palette.

Mark of the Unicorn first developed its Performer software for the Mac in 1985. It quickly became established as the leading music sequencer in the USA, and was renamed Digital Performer when audio features were added about 10 years ago. For the first few years of the Mac's existence, it was not widely adopted in the UK. Consequently, Performer users were few and far between, and sequencers from Steinberg and Emagic – available originally on the Atari computer – became better-established.

Available on the Mac for the last decade, Emagic's Logic Audio is the software of choice for most music professionals, while Steinberg's Cubase VST is more successful in the home-studio market. Now MOTU is making a bid for sequencer superstardom with the release of Digital Performer 3 (DP3).

New professional features include time-stamping of the audio regions, various automation modes for the Mixing Desk, and a dedicated MIDI Machine Control window. A new Continuous Scrolling preference causes the playback wiper to stay anchored to the centre of the window while the data in the window scrolls behind. However, scrolling performance was surprisingly clumsy and sluggish on my dual-processor 500MHz Power Mac G4.

RAM recording

Digital Performer has a number of unique features, including the Polar and Samplers windows. Polar lets you record audio to RAM, overdubbing on the fly, while the Samplers window lets you transfer samples between DP3 and most popular hardware-samplers. Anyone working with loops will appreciate the ease of Polar, while sampler users will appreciate the benefits of such close integration with the sequencer software.

Surround-sound recording, mixing and mastering are introduced in DP3 – support for all formats, including LCRS and 5.1. Multiprocessor support has also been introduced, effectively doubling the available processing power for plug-ins. DP3 includes an excellent selection of audio plug-ins. These are available when using the MOTU Audio System with the Mac's built-in audio, or with the wide range of supported cards – although not when using Pro Tools TDM hardware via the DAE software.

All the standard effects are provided, including EQ, delay and dynamics processing. Many of the new plug-ins introduced with DP3 are designed for surround applications, such as Speaker Calibration, and Feedback Delay. Other useful newcomers include MasterWorks Gate, which provides real-time, look-ahead gating; Trigger, which converts audio waveform peaks in an audio track into MIDI notes; and Plate, which simulates vintage plate reverbs.

A high number of tracks and audio voices are made possible by DP3's new Automatic Voice Allocation feature, which allows the program to dynamically assign audio voices from a pool of 96 mono voices and 64 stereo voices. For example, MOTU's preliminary bench tests – running DP3 on an 800MHz dual-processor G4 equipped with a MOTU 2408mkII audio interface – reveal that Digital Performer is able to play back 128 tracks of 16-bit 44.1KHz audio, with eight bands of parametric EQ and dynamics 32-bit processing used on each track. This compares very favourably with Pro Tools systems, which are restricted to a maximum of 64 tracks. Interestingly, you can transfer entire projects containing audio and MIDI data between Digital Performer and any other system that supports the OMF Interchange file format. Most importantly, this means you can transfer projects to or from Pro Tools using Digidesign's DigiTranslator software.

Macworld's buying advice

Performer was the first computer-based sequencer I worked with. I continued to use it until three years ago when Logic Audio leapt ahead. More recently, Pro Tools 5.1 has been my preferred environment, but now I can work in Digital Performer as easily and efficiently as within Pro Tools – but with the benefit of far-superior MIDI features. And, I can still use my Pro Tools TDM hardware via the DAE software. Even better, I can swap projects to and from Pro Tools as I please. I can also run DP3 on any of my Macs using the native audio, or with most popular audio cards, and take advantage of the wide range of MOTU plug-ins. One of the most powerful things in favour of DP3 is the excellent user-interface. This completely blows away Logic Audio and Cubase VST – both of which have very messy interfaces. I can highly recommend DP3 for professional work, as it now provides a great alternative to any of its competitors.
Mike Collins

Prophet-chasing action

Star Trek Deep Space Nine: The Fallen

Publisher: Simon & Schuster Interactive
www.simonsays.com
Distributor: MacGold (01723 582 100)
Pros: Follows the plot of the books.
Cons: Occasional sound popping.
Min specs: PowerPC G3; Mac OS 8.0; 64MB RAM; 150MB hard-disk space.
Price: £39.99 (including VAT).
Star Rating: ★★★/7.8

Third-person action games, such as those in the Tomb Raider series, are related to, but subtly different from, games in the first-person-shooter genre. They not only present action from diverse perspectives – vantage points outside your on-screen persona – but also call on different skills. These games often require a better sense of spatial awareness and feature more puzzles, platforms, and mazes.

This month I'm taking a look at third-person-action game Star Trek Deep Space Nine: The Fallen.

By far, my favourite *Star Trek* show has been *Deep Space Nine*. So I had high expectations of Simon & Schuster Interactive's release of Star Trek Deep Space Nine: The Fallen, a game that finally came to the Mac after a delay of almost a year. Was it worth the wait? In some respects, yes; in others, no.

The Fallen fits into the framework of Simon & Schuster's Star Trek Deep Space Nine series of novels. If you're a fan of the books, you'll be pleased to find a game that maintains their storyline. Developed by Collective Studios, The Fallen alternately puts you in the roles of characters Sisko, Kira, and Worf. You must recover the Red Orb, an ancient artefact containing the essence of the Pah Wraiths – a race of alien creatures that once threatened to destroy the people of planet Bajor. Two opposing forces have discovered that recovering the Orb can lead either to peace or to the development of a superweapon.

The Fallen is powered by the Unreal Tournament engine, and it looks and plays great – most of the time. Collective Studios has added some advanced features to the engine that help provide fluid character animation and realistic special effects. All the requisite elements of the third-person action game are here. You'll spend much of your time exploring different areas, recovering items you need to continue the game, and achieving goals such as collecting keycards. A lot of this game play is similar to other third-person action games, but it does drive the story forward.

The game's interface is very Trek-like, and certain elements take The Fallen

By the Prophets
Star Trek Deep Space Nine: The Fallen combines familiar elements of Star Trek storytelling with engrossing – and challenging – 3D gaming action.

beyond a basic action game. You wield a tricorder to find items and life forms, and you match your phaser to the frequency of alien shields. You can call upon Bashir, Dax, Odo, and others to help you.

One of The Fallen's most unusual aspects is that it's a story told in three parts. You're required to play each of the three characters in the story, although the order in which you play them is largely up to you. This sounds better in theory than it is in practice, because it can lead to inconsistent storytelling. It's worth playing the game out as all three characters, though I had to stop between characters and play something else to avoid burnout.

Call me uncoordinated, but I repeatedly found myself getting cut to ribbons by various menaces as I fumbled with the sometimes-complex combination of keyboard and mouse movements needed to execute commands or use some items. The game's difficulty level seems to be tweaked well above what's customary for games of this ilk.

The Fallen has a well-crafted story filled with interstitial sequences that make the game move forward like an episode of the

television show – it's engrossing and a lot of fun. And you get a chance to explore the Defiant, visit Bajor, check-out different parts of the Deep Space Nine station, and travel to a Dominion prison base.

The game's soundtrack production and voice acting are top-notch, too. In fact, the game's producers lined up most of the actors from the television series, although sound-alike actors supplied the voices of O'Brien and Sisko. Those replacement actors did admirable jobs, but I must admit that I missed hearing Avery Brooks's distinctive and commanding voice in the role of Sisko.

Alas, The Fallen had problems on my G4/500 equipped with Mac OS 9.1 and 512MB of RAM. Audio would occasionally click or pop, and I had to restart my Mac at times when the game froze. I also had a few problems getting the game to start at all.

Macworld's buying advice
Star Trek Deep Space Nine: The Fallen is beautiful to look at, but it's hampered by audio glitches and can be unreliable.
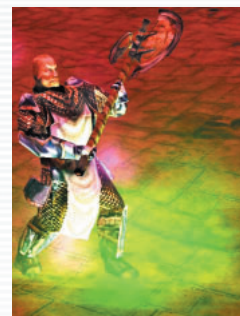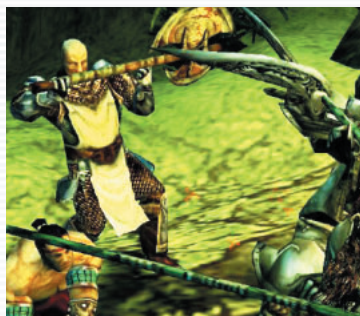**Peter Cohen**

Myth III news

Myth III: The Wolf Age

Publisher: MacSoft
www.wizardworks.com/macsoft
Myth III: The Wolf Age for the Mac should ship by late November, MacSoft claims. The company has released the best screen shots yet of the hotly anticipated title.

Civilian flight-sim

Fly! II

Publisher: MacSoft www.iflytri.com
Distributor: Softline (01883 745 111)
www.softline.co.uk
Pros: Realistic aircraft, controls and flying; network play; large community of developers making extra planes and airports etc.
Cons: Landscape and cities not convincing; needs fast machine; Mac OS X performance poor.
Min specs: Mac OS 8.6-X; 1.2GB hard-disk space; 128MB RAM; 350MHz PowerPC G3; 16MB video-card hardware acceleration.
Price: £35 (including VAT).
Star Rating: ★★★/8.7

I love flight simulators, I really do. But while researching the background for this Fly! II review, I realised that I am nothing but a lightweight amateur – there are some very serious flight-sim fans in the world. I'll try to avoid offending them (the flight-sim freaks), while trying to get to the bottom of the phenomenum.

Fly! II goes for realism. It contains thousands of airports around the world – some with realistic taxi lanes and terminals. If you find your local airport is only represented by its runway, you may find that somebody has posted a more detailed map, and possibly terminal buildings, on the Internet.

Choice craft

There is a selection of aircraft including a seaplane, a luxury jet and a helicopter. There's a community devoted to adding more models to the original list, though currently I can find only aircraft designed for the previous version of Fly!

The world of flight sims is divided into combat and realism genres. Personally, I can't get excited about flying from London to San Francisco in real time, but I know people do. I would rather be launching air-to-air missiles at enemy MiGs, and trying to land on aircraft carriers. Missions like this are found in combat flight-sims, Fly! II has its own adventure scripts. The Fly! Adventures are a little less frantic – such as getting the plane across the country, but with only just enough fuel. This doesn't get my heart pounding,

but perhaps it appeals to commercial pilots when they are relaxing in the evening.

That's a good point, actually. I always thought of pilots as being dashing heroes of the sky. Not the kind of people to take pleasure in reliving their airborne exploits on the small screen. Surely they are too busy charming flight attendants while drinking gin and tonics. I can't believe real pilots want to fly fake planes.

So presumably, the people buying flight-sims are aspirational pilots, making do with the closest thing to flying. I'm an aspirational pilot, but I would much rather be dog-fighting with Fritz in a Sopwith Camel than flying executives to an urgent meeting in the Florida Keys.

Fly by wire

Another level of realism is available by playing, if that's the right word, online. You can immerse yourself in a virtual world with other virtual pilots.

The level of realism in Fly! II is in some ways extremely high, yet in others very basic. The aircraft you fly are lovingly recreated in every detail, the dashboard (or whatever the aeronautical equivalent is) is based on the real thing, even including a cigarette lighter. The controls are as close to the real thing as possible, and the aircraft themselves are exact models of the full-size ones. Details like the propeller speed and windows all add to the realism.

Obviously, if you were to map the whole world with the same detail as is applied to the aircraft, it would take until the end of time. So simplifications must be made. The weather is very well done, and the ground as seen from the air looks much like the real thing. You can see fields and towns and lakes.

San Francisco fake

This is fine until you fly a little lower. The towns are more obviously pixelated and the landscape is very flat. Some efforts have been made to render more popular cities in greater detail – however, this just shows how the rest of the landscape is unrealistic. For example, San Francisco has the more recognizable landmarks, such as the Trans America Pyramid, Alcatraz and the Golden Gate Bridge. There are other tall buildings represented, but nothing in between them. Also, the whole city is shown as being flat, which couldn't be further from the truth.

Actually flying the aircraft feels very realistic, though you will be well advised to have at least a joystick or yoke to control it. I found I could land my aeroplane quite easily, which probably points to the realism being a little toned down. I'm sure if I really tried flying a plane with only a cursory glance at the manual it would end in a much less gentle touchdown. The helicopter, on the other hand, proved far beyond my piloting skills.

High flyer
So long as you fly high enough, the landscape is very realistic. If you get to close though the illusion is quickly lost with blocky graphics and square buildings.

While Fly! II is a capable, intricate and highly detailed game, it doesn't quite feel finished. Fortunately, people are dedicated to adding to it, improving the scenery, aircraft selection, audio for control-tower feedback and all sorts of other stuff. The end result is a game that forms a hub for a whole community of flight-sim fans.

Macworld's buying advice

If realistic flight-sims are your thing, then this is a must-have product. It isn't without its quirks, and the manual is a little thin. It will run under OS X, but I found it too slow to be useable. So ideally you will be running OS 9, on a fast Mac, with a recent graphics card. The requirements are less than that, but if it's realism you want, then you'll need the latest hardware. In fact, you could spend thousands turning your house into the cockpit of a 747 if you want to – there really doesn't seem to be any limit to what you can spend making your flight-sim more immersive. If you want realism, you won't find more realistic aircraft on the Mac.

David Fanning

Face-huggable blaster

Aliens Vs Predator

Publisher: MacPlay
www.macplay.com
Distributor: Softline
(01883 745 111)
www.softline.co.uk
Pros: The most atmospheric game ever; three playing styles; too scary to put down.
Cons: Too scary to put down; graphics slightly dated.
Price: £35 (including VAT).
Min specs: Mac OS 8.6 or higher; Rev A iMac or higher.
Star Rating: ★★★★★/9.5

Weyland-Yutani bioweapons research facility on LV-426. 2154 – ten years after Ripley effectively shut down all xenomorphic research. Until now.

The sensuous female voice of the facility computer jolts you awake.

"Massive biocontainment failure. Scientific and civilian personnel evacuation complete. Serious xenomorph infestation reported in level 1. Level 3. Level 6. Levels 9 through 14."

"Expected time until help arrives… 17 hours, 14 minutes, and 53 seconds."

And, as if to ram the point home, the entire facility plunges into darkness.

Incoming message blip from security HQ.

"OK. Stay frosty, marine. No sweat – just follow standard evac procedure. Head to the dropship on apron four, and we'll burn our way outa here."

"I hear you, sarge," you reply. "Pulse rifle is locked and cocked. Little low on ammo, though. Image enhancer is online. Motion tracker is A1… but – nah, this can't be right. I'm getting some pretty strange readings here. Are you seeing this?"

So begins the terrorfest that is Alien Vs Predator, dropping you headlong into the frightening conflict between xenomorphic creatures with too many teeth and acid for blood, and the relentless Predator, complete with cloaking device and human skulls.

Alien Vs Predator is a first-person shooter in the style of Quake or Marathon. However, instead of taking on the role of a gun-toting hero, you can adopt the role of battle-hardened marine, nightmarish alien, or the seemingly unstoppable Predator.

It's also the game you always dreamed of. Unsurpassed lighting, audio, gameplay and visuals combine to conjure up an immersive feeling of fleeing down tight corridors, frantically reloading weapons, or simply waiting in ambush as an alien then pouncing on you helpless foe.

Never has a game been able to create an environment that literally drips atmosphere of this calibre. Inside, the rooms are grimly lit, red emergency lights blinking on and off, while outside rain pours down. Some places are shrouded in inky blackness, with the marine having to rely on the ghostly light on night-vision goggles, while the Predator has to switch to infrared

Gang killing
Everything in Aliens Vs Predator is straight from the movie set: massive APCs (Armoured Personnel Carriers) and dropships dominate the external environments, while the aliens will approach with tails whipping and double jaw extended. Acid splashes over walls when the aliens explode, all adding to an incredibly tense gameplay experience.

navigation. The game mechanics are spot on. Aliens dash along walls and ceilings with reaction-stretching speed, and marines saunter past while you're cloaked as the Predator.

The audio hasn't been skimped on either. Dynamic music is straight from the film series, while the weapons sound exactly as they do in the various Alien movies. Even better, the motion tracker pings rhythmically, its mini radar flashing ever-more urgent warnings as it picks up aliens closing in.

Gameplay is additionally involving. The ability to take on the role of any of the game's main protagonists gives it a unique edge, and each race demands varying tactics and delivers a refreshingly different experience. The aliens are astoundingly quick, but little armour means they can be quickly dispatched. Playing as the Predator, on the other hand, demands stealth and cunning to reach your objective.

That said, this is a shooter in the truest sense, and the objectives are simple. Get from A to B, remembering to pull a lever on the way that will open the exit door. It's uncomplicated fun, instead allowing the player to be sucked into its futuristic world.

While graphically rich, this is no Unreal Tournament, being a port of a game that came out on Windows a couple of years ago. While well realized, the textures can look a little grainy and the characters are slightly blockier than modern gamers are used to. The upside is that it will safely work on anything from a Rev A iMac running Mac OS 8.6 upwards. It's not a happy alien playing in Mac OS X, but it will comfortably work in Classic.

It's realistic, with aliens, marines, and the Predator able to be killed in a instant. It can make for frustrating restarts, but it all adds to the atmosphere.

Included is a worthy multiplayer game, although the weighting given to the sometimes invincible-seeming Predator does mean that the best online experience is to be had between bands of marines and a brood of aliens. Multiplayer is only Mac-to-Mac at present, although a patch is promised.

Macworld's buying advice

Aliens Vs Predator is a rare gem of a game, oozing atmosphere and creating genuine feelings of tension. Lighting, graphics, and audio all conspire to pull together a game that sports a unique playing style and added multiplayer matches. It has face-huggers, too.

Matthew Bath

Mac OS X first aid

What you need to fix your Mac's problems
By Ted Landau

MARVIN JANOVITZ

Welcome to square one. When you're troubleshooting in Mac OS X, most of what you learned about OS 9 is irrelevant. There's no more rebuilding the desktop, no more isolating extension conflicts – OS X is much more than an upgrade to Mac OS; it's an entirely new operating system. When trouble strikes (and it will), your reliable set of OS 9 remedies will be of little help. Now that Apple is including OS X on every system it sells you need to know how to keep your new operating system in excellent condition. That's where this article comes in. It provides a first-aid kit for nursing Mac OS X back to health when problems arise. For everything from system crashes to files that won't go into the Trash, here's what you need to keep your OS X system in good health.

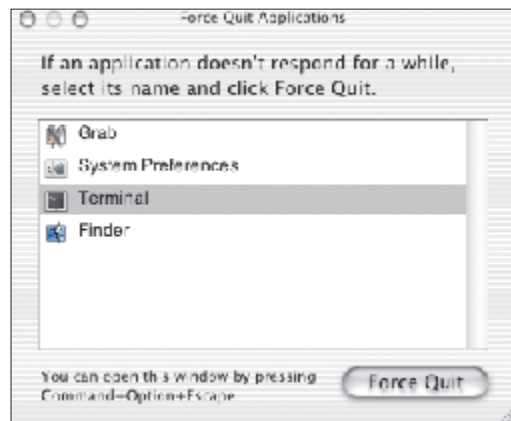## Thaw a frozen Mac

Applications can freeze in Mac OS X, just as they do in OS 9 – most commonly resulting in an endlessly spinning beach-ball cursor. However, unlike in OS 9, freezes in OS X don't usually bring your Mac to a screeching halt. If you click on a window belonging to an application other than the frozen one, the Mac responds normally. Still, you'll probably want to thaw out the frosty application, especially if you need to use it again. Here are the steps that you need to take:

Force quit
*To get out of a freeze, the Force Quit Applications window lets you choose an application to force quit.*

1. Use Force Quit If you've used ⌘-option-escape to force quit an application in Mac OS 9, you'll be pleased that this keyboard command works in OS X. Alternatively, you can select Force Quit from the Apple menu. Either method brings up the Force Quit Applications window (see "Force Quit", above). From here, you get to select which application (including the Finder) you want to quit.

2. Use Process Viewer In Mac OS X, some programs (the Dock, for example) run behind the scenes. Since you didn't launch them, they aren't listed in the Force Quit Applications window. Still, you may someday need to quit one. A Dock icon may stop working, for example, or the "puff of smoke" that appears when you drag an icon off the Dock may not disappear as it should. If this happens to you, quitting and then relaunching the Dock may be the cure. This is where Process Viewer (found in OS X's Utilities folder) comes to the rescue. Launch it, and select the Dock process from the list that appears (see "Dock Quit", left). Then select Quit Process from the Processes menu. The Dock will vanish and then reappear in about ten seconds.

3. Log out or restart If neither Force Quit nor Quit Process works, select Log Out from the Apple menu to log

Dock quit
To quit processes not listed in the Force Quit Applications window, use Process Viewer.
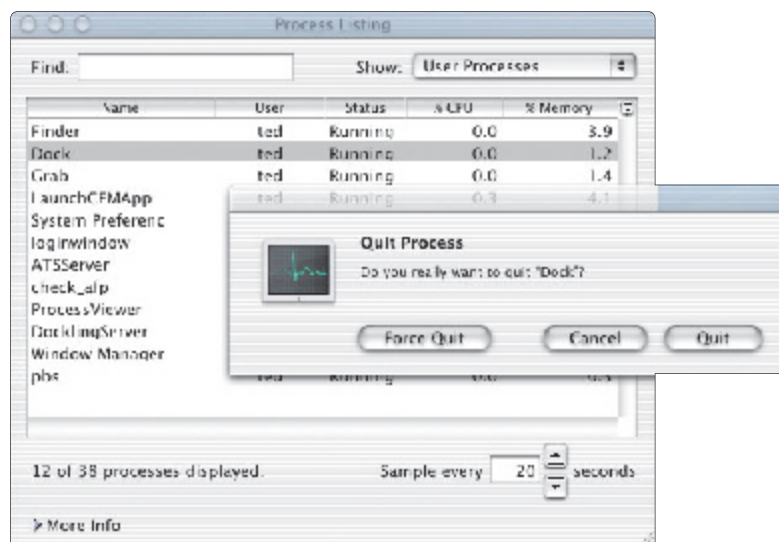
out, and then log back in. This almost always fixes a freeze. Because the freeze probably affected only one application, you can save your work in any other open applications before doing this.

With those rare freezes so severe that you can't get the Log Out command to work, you may need to restart your Mac. However, before you do, let it sit idle for a minute or two. This gives it a chance to write cached data from RAM to the hard disk (something it may still be able to do, despite the freeze), possibly preventing data corruption. After you've done that, use whatever method works with your particular model (pressing ⌘-control with the power button on laptops or with the reset button on desktop Macs).

Prevent panic attacks

Most Macintosh users have come across the dreaded system bomb from time to time, but the types of crashes that cause it do not occur in Mac OS X. Don't start celebrating quite yet, though – as OS X has its own version of the system crash. It's called a kernel panic – and it's just as debilitating as any OS 9 crash. A kernel panic happens when the underlying Unix core that Mac OS X depends on fails. You'll know it's happened to you if strings of text containing error messages appear over the current display on your screen – right before everything stops working.

Kernel panics are rare but can be triggered by familiar demons: corrupted software, a software bug, or incompatible hardware. For example, as of OS X 10.0.4, a kernel panic may occur if you eject a CD while the iTunes application is opening; if you start up with a blank CD in a SCSI-connected CD-RW drive; or if third-party RAM isn't within your Mac's specifications, even if that RAM works fine in OS 9. Here is how to recover from a kernel panic:

1. Restart If a kernel panic occurs, just restart your Mac – you should be fine.

2. Reinstall Alternatively, you can check for updates. Typically, the only thing you can do to prevent the panic's return is to avoid whatever caused it. In the long term, you need to get a bug-fix upgrade to the offending software. An update may already exist; to find out, check sites such as **www.versiontracker.com** and run OS X's Software Update. Otherwise, on the off chance that the kernel panic was caused by corrupted software rather than a bug, try to reinstall the suspected culprit.

Get your OS out of the traps

When your Mac won't even start up, you know you're in trouble. In Mac OS X, that problem can take any of several forms. You may wind up with a blank "blue screen of death" or a ripped-in-half System Folder icon, or – most unsettling for a Macintosh user – you may get dumped into a command-line mode displaying several lines of error messages. Try the following tricks:

1. Reboot in OS 9 On most OS X-supported Macs, you can hold down the option key while restarting. This will bring up a window in which you can select which OS you wish to use. Select the OS 9 start-up icon. In OS 9, open the Startup Disk control panel. Make sure you're using version 9.2.1 or later of Startup Disk – run Apple's Software Update control panel to see whether you have the latest version, as earlier versions may cause problems when you try to switch to OS X. Then select an OS X system and restart. With luck, OS X will now start up.

2. Disconnect hardware Certain SCSI cards and USB hubs are among several hardware peripherals linked to start-up crashes. The workaround? Remove the card or device from your Mac. Then check with the hardware manufacturer (or a Mac Web site, such as my own MacFixIt (**www.macfixit.com**) for information about a possible permanent solution, such as an OS or firmware update that allows the card or device to work. In some cases, you can still use the hardware if you reconnect it after start-up.

How privileged are you?

Your log-in status determines your ability to access the contents of each and every file on your Mac OS X system's hard drive. To check your status with regard to a particular file or folder, select its Show Info window (⌘-I) and select Privileges from the pop-up menu. You'll then see the privileges assigned to each of three categories: the owner of the folder, the group whose members can access the folder's contents, and everybody else. If you are the owner, you can modify the privileges assigned to the various categories. For example, if a folder is Read Only for everybody and you want others to be able to modify the contents, you can change that category's privileges setting to Read & Write.

On the surface, this seems to be the equivalent of the Sharing settings accessed from the Get Info windows of OS 9. However, there are critical differences: to start with, in Mac OS X, privileges are always enforced. Similarly, for users who aren't on a network, these settings become relevant in OS 9 only if you enable Multiple Users. In OS X, you always log in as a specific user. And privileges can be set separately for each file in OS X, down to the last text document. In Mac OS 9, settings are limited mainly to folders. Finally, in OS X, even the owner can't reassign a file to another owner or group – at least not from the Show Info window.

All this makes dealing with privileges unavoidable in OS X. It also can be a source of irritation, as you're faced with "insufficient privileges" errors never seen in OS 9. Here are some guidelines to help you through this tangled web:

Who owns what? Each user is the owner of the files in his or her User directory, and the system is the owner of just about everything else. Your access to files owned by the system depends on your group assignment. As an administrator, for instance, you're a member of the Admin group, which has Read-&-Write access to what's in the Applications folder – even though Admin does not own those files. Items assigned to the group "wheel" (including nearly everything in the System Folder) can also be accessed by administrators – but only via root access.

You can get a complete list of all groups and see their members by opening NetInfo Manager and clicking on the Groups item from the Directory Browser. Click on the name of a group, and the Users list at the bottom of the window will show the names of its members. You can even create new groups with this utility.

Copy cats When you copy an item to a new location, the privileges of the copy will change to match those of the destination location. So, if you copy a program from the Applications folder to your Home directory, the owner of the file will change from the system to you.

Folders trump files Folder privileges have priority over the privileges of files within the folder. Suppose that as an administrator, you place an application in the Applications folder and enable Read-&-Write access – which imparts the ability to drag it to the Trash – for all users. Because the program resides in the Applications folder – which limits deletion power to administrative members only – a non-administrator's attempt to delete the file will be denied.

Ignore privileges (sort of) There is an option called Ignore Privileges On This Volume, in the Show Info window of volumes. Enabling it theoretically turns off the enforcement of privileges for that volume. The rationale is that when you mount an external volume, the privileges settings used in the volume's prior location will be irrelevant. Enforcing the privileges will likely prevent you from accessing the contents of the volume, defeating the purpose of mounting it. But either by design or due to a bug, the option doesn't work as expected.

Make Unix your friend Show Info's privileges are actually a subset of the full Unix-based permissions settings that OS X uses. If you want to easily take advantage of the available settings, try a $10 shareware utility called Get Info (**www.gideonsoftwares.com/getinfo.html**). It allows an administrator to change the owner and group of any file and to modify the read, write, and execute permissions.

3. Run a disk-repair utility You may be able to fix your start-up problem by repairing corrupted data. Disk First Aid, part of the Disk Utility application that comes with Mac OS X, is designed to do just that (see First Aid, right). Unfortunately, the current version of Disk First Aid won't make repairs to the start-up volume. The solution is to restart from the OS X installation CD, select Open Disk Utility from the Installer menu, and use Disk First Aid to attempt to repair your drive.

As of this writing, there's only one third-party repair utility that can run from Mac OS X: Micromat's Drive 10 (£75, Softline, 01883 745 111). However, the latest versions of Alsoft's DiskWarrior (£65, Softline), Micromat's TechTool Pro (£95, Softline), and Symantec's £68 Norton Utilities (Computers Unlimited, 020 8358 5857) can all make repairs to OS X volumes when run from OS 9. They may be able to fix problems that Disk First Aid misses.

4. Run fsck If you don't have a Mac OS X installation CD or another repair utility handy, all is not lost. Restart,
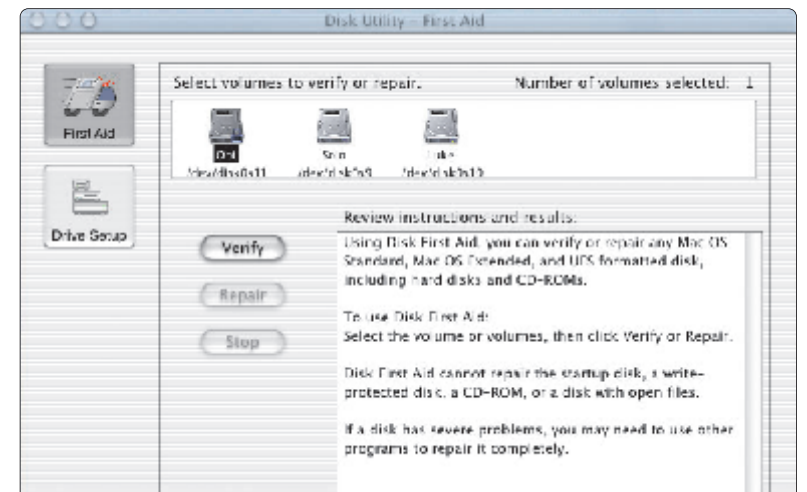
First aid
Disk First Aid, Apple's well-known Mac OS 9 repair utility, survives in OS X as part of Disk Utility.

and hold down ⌘-S. This dumps you into single-user mode. You'll see a distressingly long block of white and yellow text against a black background. Don't despair; this is just a variant of OS X's Unix command-line interface.

When the scrolling has stopped and you can actually enter text, type /sbin/fsck -y and press return. This will initiate a Unix repair function called fsck (for file system check). In OS X, Apple has added Disk First Aid code to this function. If fsck makes any repairs, you'll get a message that says "File system was modified". Run fsck again until the message no longer appears. (The first run may uncover additional errors that will require a further run to fix.) Once all repairs are made, type reboot and press return.

If you get the start-up error that dumps you immediately into the command-line interface, you can run fsck directly from there, without needing to restart.

5. **Reinstall OS X** Corrupted files in the OS X Library folders can cause a start-up crash. Though you can spend time trying to track down and remove the offending file(s), it's often easier to start up from the OS X installation CD and reinstall OS X (being careful not to select the option that erases the disk). Doing this will leave almost all your custom changes intact. But if you've updated the OS to a version that's newer than the one on the CD, you'll have to reinstall those updates, too. If an initial reinstall doesn't work, try restarting from OS 9 and deleting the entire OS X System Folder. Then restart from the OS X installation CD and reinstall the operating system.

Modify this

OS X will sometimes refuse to let you move a file to the trash – typically informing you that you don't have "sufficient privileges". You may get the same sort of error message when you try to copy, move, or open a file. Unlike

OS 9, OS X requires you to log in with an identity every time you start up. Depending on the privileges associated with your log-in, you may run into problems (see "How privileged are you?" for more information). Here's how to get OS X to cooperate:

1. **Unlock the file** A common reason for the inability to delete a file in OS X is that the file is locked. The easiest way to fix this – if it works – is to deselect the Locked option in the file's Show Info window (similar to OS 9's Get Info windows). You may run into trouble if the file was locked under Mac OS 9. In this instance, you can try DropNuke (**www.divnull.com/products.html**). This freeware utility should unlock and delete any file or directory of files dragged onto it. Otherwise, go back to OS 9 to unlock and delete the file.

Occasionally, OS X may allow you to place a file in the Trash but then refuse to delete it. If that happens, try placing the file in a folder and dragging the folder to the Trash before selecting Empty Trash. You can also try to reboot in OS 9 and delete it. Be careful to remove the file from the Trash before switching to OS 9, or you may have trouble locating it.

2. **Run Disk First Aid** If the file isn't locked, start up from the Mac OS X installation CD and run Disk First Aid as described earlier. There may be a problem preventing you from deleting the file; hopefully, the utility will fix it.

3. **Be an administrator** Still no luck? Open Users System Preference. For the name of the currently logged-in user, look in the Name column. Then check the Kind column (see Three of a kind, right). If the Admin designation does not appear next to your name, you're not an administrator. There are some things an administrator can do that other users can't. For example, regular users can't add files to or remove them from the Applications folder.

Sharing responsibility

If you're an administrator and another user isn't (for example, if your daughter has her own log-in on the home computer), you can opt to give that user administrator status as well. To do this, highlight the user name and click on Edit User. Select the Allow User To Administer This Machine option, and then click on OK.

4. **Get root access (if needed)** Mac OS X occasionally blocks you from modifying certain files even if you're an administrator. Prime examples are the files in the System Folder. If you try, for example, to move a file from the System Folder, you'll get a message such as "The operation cannot be completed because you do not have sufficient privileges for item or folder name", or you could be faced with "The item *item name* could not be moved because system cannot be modified." The rationale behind this is to protect these essential files from accidental harm – not a bad idea, because you usually have no need to mess with these files. However, if you're an administrator and you want to modify the contents of the System Folder, you can do so by giving yourself root access. There are several ways to accomplish this bit of Mac OS X magic.

One method is to log-in as the root user. Before you can do that, you have to set up a root account. Select OS X's NetInfo Manager (see Root of the matter, on page 89) via its Enable Root User command (after first clicking on the lock icon to allow changes to be made, choose Domain: Security). You can also start up from the Mac OS X installation CD, and select the Reset Password command from the Installer menu. From there, select System Administrator (Root) from the pop-up menu that appears and establish a password. Once you've set up the account, restart as usual and enter the word root as your user name, along with the password you selected. You'll then have access to nearly everything on the drive. Be aware that logging-in as root can be dangerous: the root can bring

down a system by mistakenly deleting or modifying the wrong files.

Another method involves the $15 shareware application Pseudo (**http://personalpages.tds.net/~brian_hill /pseudo.html**), which essentially grants root access in a limited way, circumventing the need to log in as root. It lets you launch an application that you couldn't otherwise launch (or open documents that you couldn't otherwise open) unless you had root access or went to the command line. To use it, simply drag onto the Pseudo icon any application you want to work with. The program will open, prompting you for your admin password along the way. After entering the password, you'll have root access to the application and to any files you open from within it. This means that you can use TextEdit to open documents (such as preferences files) in the System Folder or even in OS X's invisible Unix directories; you would otherwise be prohibited from opening them.

Make files and applications get along

How often do you get an email attachment – a picture from your parents' trip to the Lake District, say – and find that double-clicking on it sends your Mac into a confused search for an application that can display it? When you double-click on a document icon in Mac OS X, the file should automatically open in an appropriate application – typically the one that created it. But OS X may sometimes open the wrong application or even claim that no application is available to open the document. Here's how to avoid that problem:
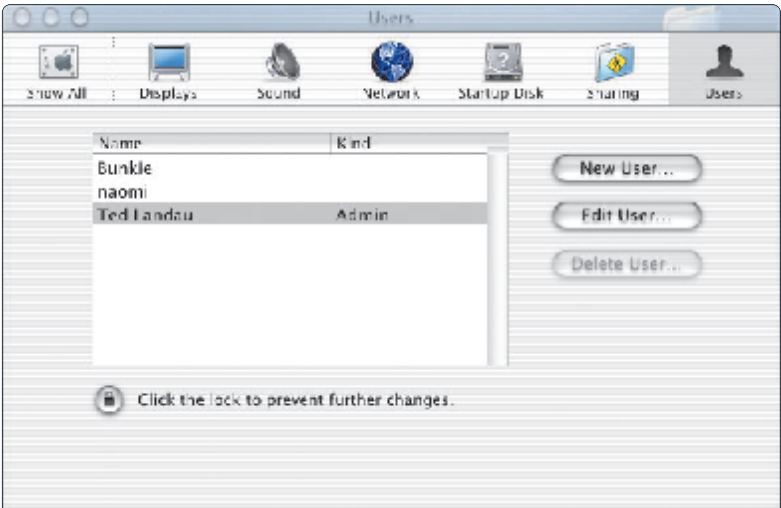
1. **Check for updated applications** The version of Microsoft Internet Explorer that came with the initial release of Mac OS X has a problem decompressing files: it tries to launch a version of Expander from OS X's Classic mode rather than one available in OS X. Update to the latest version of Explorer to fix this.

2. **Check for Fix-It utilities** In some cases, .dmg (disk image) files downloaded from the Web show up in Mac OS X as text files. Double-click on them, and you launch TextEdit rather than Disk Copy. You can work around this by dragging the image file's icon to the Disk Copy icon or by mounting the image from within Disk Copy. If you find these extra steps annoying, you can use a freeware utility called DMG Fixer (**http://homepage.mac.com/mnkd/ dmgfixer10.sit**). Just drag the problem file's icon to the DMG Fixer icon, and the utility will permanently fix the file. Afterward, you'll be able to open the file correctly by double-clicking on it.

3. **Place the application in the Dock** If you've got two versions of the same application on your drive (for example, one for OS 9 and another for OS X), and documents for that application open by default to the wrong one, drag the preferred application's icon to the Dock. Typically, OS X will open that version of the program by default when you double-click on documents created with it.

4. **Make the application open the file** From the Application pane of the problematic file's Show Info window (see Quick change), select Open This Document With A Specific Application. To change the listed application, click on the application's icon, and from the pop-up menu that appears, select Add Application. In the resulting window, select the desired application. If the application you want is dimmed, change the Show pop-up menu from Recommended Applications to All Applications. Remember, however, that this will fix the problem for only that particular file.

5. **Get more document control** To get all files of the same type to open with an assigned application, select Show Info: Open This Document With The Generic Application For Documents Of This Type, and if necessary, click on the Change Application button to select the application you desire.

Three of a kind
To make a user an administrator, select his or her name, click on Edit User, and choose the appropriate option.

The Reset Password command is useful if you ever forget your Administrator password. Just boot from the Mac OS X CD, and then find the command in the Installer menu. After that, select an account name and create a new password.

If the Change Application button is dimmed or otherwise doesn't work, try the xFiles shareware utility ($20; **http://personalpages.tds.net/~brian_hill/**). It won't always fix the problem, but it's worth a try. Launch the utility, and drag the file that you want to modify to the xFiles window. Delete whatever code is listed in the text box next to Creator. Click on Change. Now double-click on the file. It may already open in the correct application. For example, I had a document that launched PictureViewer in OS X's Classic environment when I double-clicked on it. After I eliminated the Creator code, it opened in OS X's Preview. If that doesn't fix it, return to the Show Info window; the Change Application button should now be enabled. Select the desired application.

6. **Change the file-name extension** Unlike Mac OS 9, Mac OS X uses file-name extensions (suffixes that are appended after a period to a file's name, such as .doc for

Root of the matter
To enable root access – or disable it, if it's already been enabled – use Netinfo Manager.

Quick change
To choose the application that will open when you double-click on a document, use the Applications pane of the file's Show Info window.

Unix: controlling the strings

There's much more than meets the eye in Mac OS X – that is, there's a lot going on that you won't even notice most of the time. Located at the root level of the drive, and normally invisible, is the true power behind Aqua's throne: the dozens of files and directories that constitute OS X's version of Unix. To truly master OS X, you'll need to grapple with Unix. And the primary way to do this is via the Terminal application.

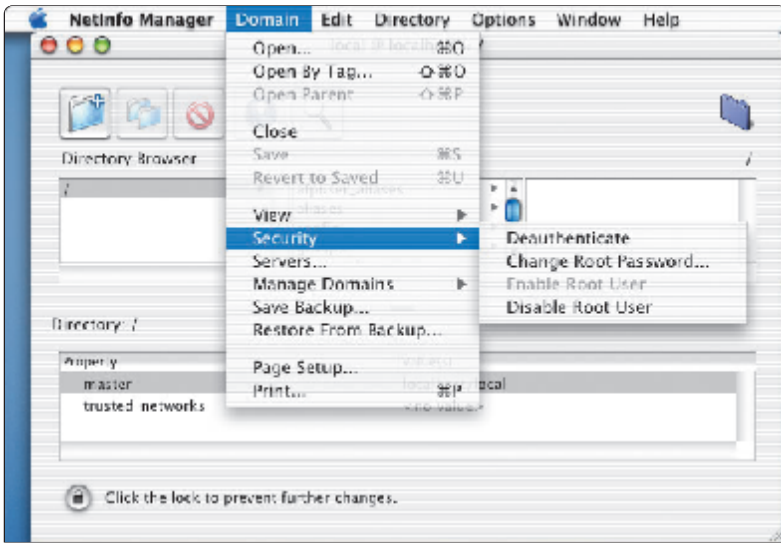However, for those who would just as soon avoid Unix's command-line interface, shareware authors have come to the rescue. They've designed Aqua-based utilities that do many of the things you otherwise need Terminal to do. These include several of the utilities mentioned in this article, such as Pseudo, Get Info, TinkerTool, and xFiles.

But if you already know – or are willing to learn – how Unix works, Terminal offers the advantage of allowing you to do tasks that can't (at least not yet) be done any other way. This is neither the time nor the place for a full introduction to using Unix. But to give you an idea of the power you can wield with it, here's an example.

Still can't empty the Trash? If, after following my other suggestions, there's a file or folder in the Trash that you still can't delete, try launching Terminal.

By default, Terminal should be in your Home directory. I'm assuming you want to delete a file from your own Trash (every user has his or her own separate Trash in OS X), so you're already almost in the right place.

Type **cd .Trash** to move into the Trash directory.

Type **ls.** This should list everything currently in the Trash. This step is optional, but confirms that you've made it to the desired location (see Take out the Trash, below).

Type **sudo rm -R** *name of file or directory you want to delete*. You will be asked for your password. Give it, and the file or folder should be deleted. Note: **sudo** is a command that temporarily gives you root access, which may or may not be needed. (For more on sudo, see Mac OS X Secrets, November 2001.) It's essentially what the Pseudo utility mimics. The **-R** option is needed only if you're trying to delete a folder that isn't empty. In some cases, you may need to type the following lines before using the **rm** command (these commands unlock any locked files):

chflags -R noschg *file name or directory name or chflags -R nouchg file name or directory name*. If this fails, try **sudo chmod 777** *name of file or directory you want to delete*. This changes the permissions of the file, so that everybody has read-&-write access to it. Now try again to delete it – either via **rm** or by selecting Empty Trash from the Finder.

When entering the name of the file, type the first letter, and press the tab key. If no other files in the Trash have a name that begins with that letter, Terminal completes the name for you. If you want to delete everything in the Trash, type **rm -R**. But be careful: if you're somewhere other than in the Trash directory, this could delete files you never intended to erase.

Take out the Trash
When the Finder's Empty Trash command doesn't cut it, you can locate and delete trashed items from Terminal.

Word documents) to identify the document type. For example, files with a .txt extension will open in TextEdit by default, while graphics with a .tif extension will open in Preview. Assuming you know what extension you want, simply append it to change a document's icon as well as the application that opens it. For example, change a text document's extension from .txt to .cwk and it will open in AppleWorks instead of in TextEdit. You may still need to eliminate the Creator code, as described in the previous tip, before this will work.

Stay healthy

Mac OS X – like any new OS – will have to contend with a few teething problems. Fortunately, this operating system has a lot of people working to keep it healthy. From tips on how to best use the features built in to OS X – to freeware and shareware utilities that provide the features Apple omitted – troubleshooters (such as *Macworld's* Christopher Breen, see page 169) have already given us a well-stocked medicine cabinet filled with remedies. **MW**

+TIP

Do you need help finding out where a particular file is supposed to go? No problem. Just double-click on the Installer.pkg file, continue until you get to the Select A Destination screen, and select Show Files.

Macworld

MACEXPO 2001 SHOW GUIDE

Apple, Adobe, **Macromedia**, Microsoft, **Alias|Wavefront**, Hewlett-Packard, **Epson**, IBM, **Sony**, Iomega, **FileMaker**, iView, **Wacom**, Hermstedt, **Extensis**, 4Sight, **LaCie**, Connectix, **Microtek**, Minolta-QMS, **iProof**, SmartDisk, **Village Tronic**, Oki, **Macally**, SoftPress, **Contour**, iRez, **PowerLogix**, Proxim, **Keyspan**, Corel, **Eovia**, Digicom, **Alta**, Computers Unlimited. **MacLine**, MacWarehouse, **AM Micro**, MicroRent, **Micro Anvika**, RealViz, **Dantz**, Dataworld, **Softchaos**, Mac Accessory Centre, **Demon**, Digit, **Macworld**...

MacExpo 2001

Floor Plan
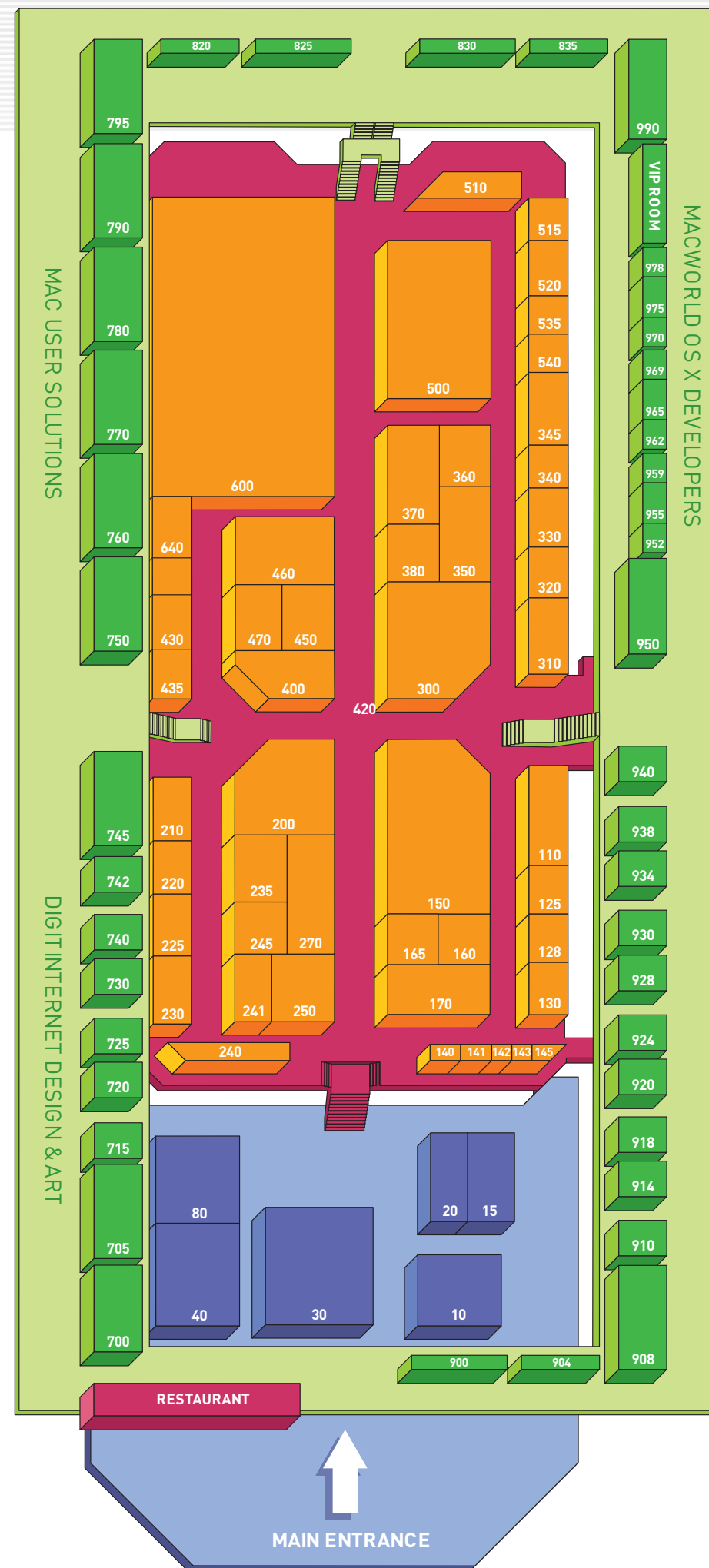
Legend:
- GROUND FLOOR
- MEZZANINE
- GALLERY LEVEL

MAC USER SOLUTIONS

DIGIT INTERNET DESIGN & ART

MACWORLD OS X DEVELOPERS

VIP ROOM

Stand numbers: 820, 825, 830, 835, 795, 990, 790, 510, 515, 780, 520, 535, 540, 500, 978, 975, 970, 969, 965, 770, 345, 962, 360, 340, 959, 600, 370, 330, 955, 760, 640, 380, 350, 320, 952, 460, 750, 430, 470, 450, 310, 950, 435, 400, 300, 420, 940, 745, 210, 200, 938, 742, 220, 235, 110, 934, 740, 225, 245, 270, 150, 160, 125, 930, 730, 230, 241, 250, 170, 130, 928, 725, 240, 140, 141, 142, 143, 145, 924, 720, 920, 715, 918, 914, 80, 20, 15, 910, 705, 40, 30, 10, 908, 700, 900, 904

RESTAURANT

MAIN ENTRANCE

Exhibitor List

Company	Stand	Company	Stand
4Sight Limited	310	Keyspan (AM Micro)	200
Alan Stirling Technologies	705	LaCie	640
Alias/Wavefront (Maya)	700	Macintosh User Groups	820
Adobe Systems	300	Mac Accessory Centre	220
Alta Technology	955	Mac Recovery Club, The	125
AM Micro Distribution	200	Mac Repair Centre	340
Apple	600	MacAcademy/Windows Academy	540
Apple Solutions	750-795	Macally	210
Apple Training	515	MacLine	150
Arbiter Group	959	Macromedia	40
Arlon Printers	143	Mac Support Company	980
Canon UK (MacLine)	150	MacUnlimited.com	30
Cartridge Company, The / SureBasic	520	MacUser	370
Central Solutions (CGA)	969	MacWarehouse	745
Channel Dynamics Distribution	950	Macworld	170
Compu B	825	Macworld OS X Developers	952-978
Computer Technique	470	MAG / MacPower	345
Computers Unlimited	80	Market Link Publications	225
Connectix (CU)	80	MCE Technology (AM Micro)	200
Contour Design	130	Micro Anvika	235
Corel Corporation (CU)	80	Microrent	510
CPS (Creative Publishing Solutions)	400	Microsoft	460
Dantz Development (LaCie)	640	Microtek Europe	110
DataWorld	245	Minolta-QMS (MacLine)	150
Demon InterNet / Thus	20	OakTree Software	140
Digicom (AM Micro)	200	Oki Systems	270
Digit Magazine	740	PC Bookshop, The	240
DrawWell/One Step Solutions	970	Perforce Software Europe	952
Duraweld Limited	360	Popular Communication Courses	142
Epson (CU)	500	Power Logix (AM Micro)	200
Eovia / TGS	15	Proxim/Farallon	430
EvEnt Engineering Services	230/962	RealViz	380
Extensis	450	SmartDisk	10
FileMaker (CU)	80	Softchaos	830
Formac	435	SoftPress Systems	320
G2 FileMaker Association	705	Sony	241
Hermstedt	250	Splash Printing	330
Hewlett-Packard (MacLine)	150	TeamAgenda / X Generation	535
IBM Speech Recognition (MacLine)	150	Village Tronic (AM Micro)	200
Iomega	350	Virtual Training Co	128
iProof Systems (AM Micro)	200	Wacom Europe (CU)	80
iRez Technologies (AM Micro)	200	XYZ Digital Map Co	145
iView Multimedia	165	Zürich Advice Network/Allied Dunbar	141

Macworld MacExpo 2001 Show Guide

Macworld
www.macworld.co.uk

IDG COMMUNICATIONS

GETTING THERE:
BY CAR
The Business Design Centre
is situated on Upper Street,
to the left at Islington Green
– where Essex Road and
Upper Street diverge.

From outside London, follow
the A1 down the Holloway
Road and Upper Street.

From central London, follow
the A1 out of the City to
Islington after crossing
the Pentonville Road.

Parking in the area is
extremely limited, so use
public transport if you can.

BY BUS
The following routes go past
or close to the Business
Design Centre: 19, 30, 38,
43, 73. Alight at Angel or
Islington Green.

BY TRAIN/TUBE
Euston, Kings Cross and
St Pancras train stations
are all nearby.

A regular underground train
service (Northern line) runs
to and from Angel Station,
which is a two minutes'
walk from the Centre along
Upper Street.
Alternatively, Highbury &
Islington Station (Victoria
Line) is a fifteen-minute
walk from the Centre.

Business Design Centre
52 Upper Street   Tel: 020 7359 3535
London N1 0QH   www.businessdesigncentre.co.uk
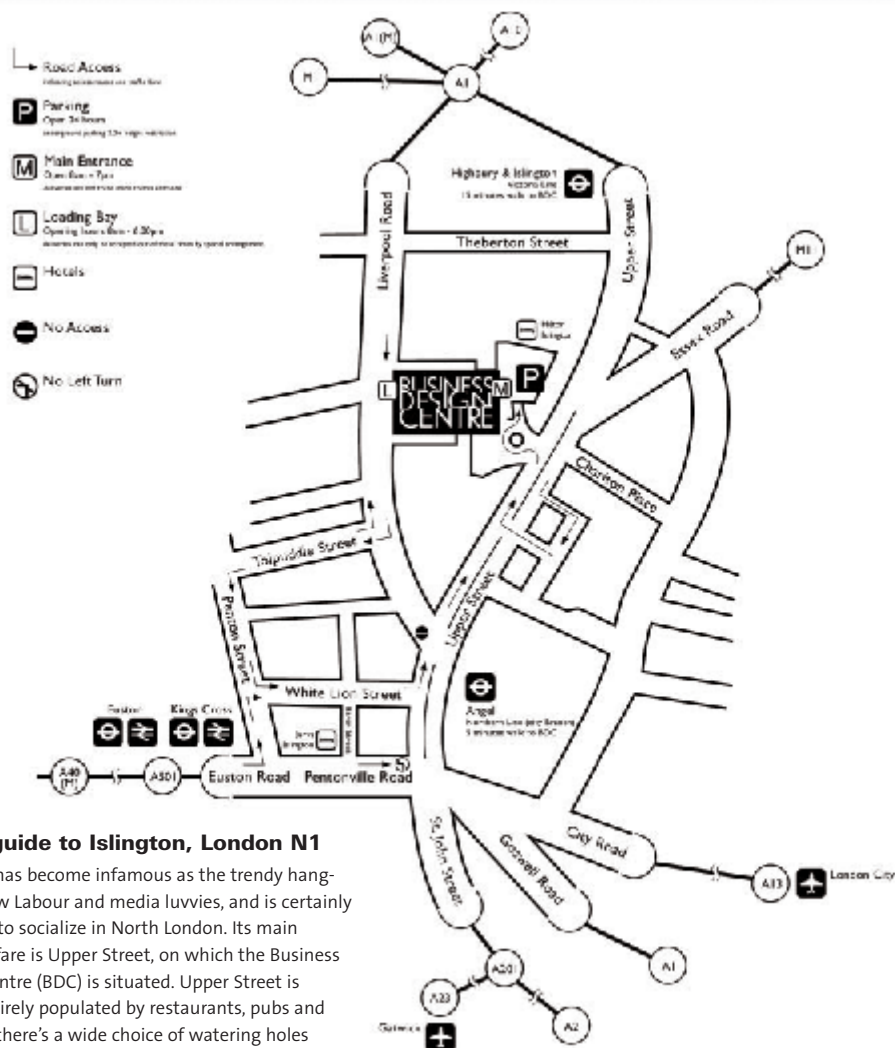
Quick guide to Islington, London N1

Islington has become infamous as the trendy hang-out of New Labour and media luvvies, and is certainly the place to socialize in North London. Its main thoroughfare is Upper Street, on which the Business Design Centre (BDC) is situated. Upper Street is nearly entirely populated by restaurants, pubs and bars – so there's a wide choice of watering holes and food places for you to rest your show-weary legs in at lunch or after the show for dinner.

Coffee Between Angel and the BDC, Upper Street has all the major coffee-shop chains.

Pubs The nearest pub is the Antipodean Walkabout, which is likely to be full of funny-voiced rugby shirts on Friday night and all-day Saturday. The Slug & Lettuce is also very close to the BDC (turn left towards Highbury & Islington (H&I) tube, cross the road to corner of Islington Green). The crowds both inside and outside will show you how popular (and crowded) it is. Get there early, or find a seat in the less busy upstairs bar. If you feel like mixing with the Henley crowd, there's a Pitcher & Piano a couple of minutes away. Also towards Angel: there's often seats at The Steam Passage (1 min from BDC); faux Irish delights can be had at O'Neil's a bit further down (3 mins); and The York, is practically next door to Angel tube station.

Bars Close to the BDC is Café Flo, and The Dome is just down the road from there.

Restaurants There's a clutch of pizza/pasta places close to the BDC. There's an Ask restaurant actually in the BDC, a large Pizza Express just over the road (335 Upper St), and an Est Est Est a minute's walk away (58 Upper St). If you want the best pizza/pasta in London, visit Oregano – a minute's walk towards H&I tube, and off Upper St on St Albans Place (next to Reckless Records). We also recommend: mussles or chicken and frites, plus a choice of 400 Belgian beers at Bierodrome (173-174 Upper St); French at Le Mercury (140 Upper St) and Alastian fare at Tartuf (88 Upper St); Thai at Tuk Tuk (330 Upper St); Chinese at Youngs (154 Upper St) or Yellow River Café (206 Upper St); Turkish at Pasha (301); oriental at Wok Wok (37 Upper St); organic nosh, beer and wine at The Duke of Cambridge (30 St Peter's Street); and tasty oriental dumplings at New Culture Revolution (42 Duncan St), just round the corner from The York.

If you're arranging a business lunch or dinner around the show, (or just fancy a posh meal), book a table at: Lola's (modern British cuisine) at The Mall, 359 Upper St (020 7359 1932); Julius Brasserie (modern European) at 39 Upper St (020 7226 4380); or former Tony Blair favourite, Granita (modern European) at 127 Upper St (020 7226 3222).   **MW**

Simon Jary
editor-in-chief
Macworld

With few High St Apple stores, MacExpo gets us all excited. But don't rush in unprepared…

How to survive MacExpo

t's at shows such as London's MacExpo that newcomers buy their first Macs, and old hands upgrade to the latest Apple models. It's the excitement of actually seeing, touching and playing with the latest Macs that makes people give into temptation, and buy straight away. Ordering off the Web or through a mail-order dealer suffices for the rest of the year, but walking away from a show under the weight of a brightly boxed new Power Mac, iMac, 21-inch monitor, or digital camera is a real thrill. Even if it's a webcam, high-capacity CompactFlash card, or bunch of RAM, that hands-on purchase of stuff for your Mac knocks the slippers off an online transaction or phone call. There's no hold-music for a start...

Many people don't live near an AppleCentre or PC World, so our hands-on purchase choices are severely limited. Apple has opened its own-branded shops in the US, which look great. There's every type of Mac just sitting there waiting to be played with, alongside third-party digital cameras, printers, scanners, etc. Walk into even a Mac-friendly PC store, and you'd think the only usable software was a choice between a dusty copy of SimCity and a crumpled ClarisWorks 3.1 box. Each new Apple shop has acres of shelves covered in the latest Mac-compatible software.

Apple doesn't have any plans to open such shops outside the US, so the closest we get to such shopping opportunities is the traditionally hidden-out-of-the-way AppleCentres and occasionally decent high-street store. Apple is increasingly relying on PC World to sell its Macs in the UK. While PC World's recent attitude to Macs is better than it used to be, it's not an ideal solution in a Windows-dominated world.

For instance, there's no high-street AppleCentre in Birmingham, Britain's second-largest city. Apple is in desperate need of a public face in many metropolitan areas.

In the meantime, a big Apple show is the perfect place to get to grips with an iMac, PowerBook, Power Mac or iBook, and query the experts on all sorts of matters: RAM, video cards, USB, wireless networking, screen compatibility, storage solutions, and so on.

Follow *Macworld's* advice, and your visit to MacExpo will be a pleasure, as well as helping you buy the right hardware and software. Here's ten things to make sure it's not just your feet you're thinking about after visiting MacExpo:

1. Arrive early. You could rush around the whole show in 15 minutes – but why not just run round your back garden instead, and save yourself having to leave home. If your Mac is more than just funny coloured furniture, one of the exhibiting companies is sure to have something that could change the way your computer works for you – be it via hardware, software, consultancy, repair or training.

2. Wear comfortable shoes. When you're not walking a lot at MacExpo, you'll be standing up. Most of the Business Design Centre is carpeted, but it's not a beanbag showroom. See also Point 6.

3. Don't enter the Design Centre thirsty – the mineral water costs more than a monthly ISP account. Gulp! But beware over-filling – the toilets are often a five-to-ten-minute walk away up and down more stairs than an Escher drawing.

4. Plan ahead. Peruse this show guide, and take a look at the floorplan before venturing into the hall. There's plenty to see, and if you wander aimlessly, you may miss something you were really interested in. (Please note that what you're reading in this issue of *Macworld* is just an extract from the full *Macworld MacExpo Show Guide* – pick-up a copy at the venue as soon as you arrive.)

5. Don't pick up a bag, literature, or products until late in the day. If you grab a free, colourful bag the moment you walk in the door, you'll be tempted to put things in it. Why weigh yourself down for hours? Make a note of stuff you want to take home, and pick it up towards the end of the day.

6. Touring the show floor can be very tiring. Take a break every now and again, and find a place to sit down. Head for the main café on the upper level. Check-out the exorbitant prices, though – see Point 3.

7. The best break you can have is outside of the show. Plan on having lunch somewhere close-by. The food will be cheaper, and, believe me, you'll need the air. There's less oxygen in a show venue than there is a breached mini-submarine. After an hour, you're breathing the air you brought in with you, and that's already gone through 100 strangers. Step outside, and get some fresh air. Find a pub or restaurant, and take-in refreshments.

8. You're taking a break for lunch in The Slug and Lettuce. Don't think that doing a show will be easier after five pints. Save the drinking for after the show. You've still got things to pick-up, and just because you're seeing double doesn't make that 733MHz Power Mac G4 a multiprocessor system.

9. You've restricted yourself to a shandy with your BLT, so it should be easy to remember not to leave your bags in the pub... or your show pass – you won't get back in without it, and you'll have to register all over again.

10. Don't leave the show with that nagging question still troubling your mind. There really will be someone at MacExpo who knows the answer, and will be more than happy to speak to you. They might try to sell you something – but, who knows, maybe you need it...

MacExpo 2001 is the biggest Mac show in the UK for four years. If it's a success, there's almost certainly going to be another MacExpo in 2002. In the meantime, keep up-to-date with developments by reading *Macworld*, and visiting **www.macworld.co.uk**. The more you know about a subject before you attend a trade show, the more you'll take from it. You won't need to upgrade the Mac you bought at this year's show, but there's bound to be new peripherals and software coming through in the next 12 months.

See you at MacExpo! Check-out *Macworld's* own show specials at stand number 170. **MW**

> "The hands-on purchase of stuff for your Mac knocks the slippers off an online transaction or phone call. There's no hold-music for a start."

Apple's new, fast portables on show

Titanium tearaway
The new entry-level 550MHz PowerBook G4 offers a 100MHz system bus, while the 667MHz model features a 133MHz system bus. Apple claims that the new Titanium PowerBook G4 outperforms Pentium III-based 1.13GHz notebook systems on average by 48 per cent. Both models provide advanced graphics and fast 3D rendering with the ATI Mobility Radeon graphics processor with AGP 4X support and 16MB of fast DDR video memory. Its Gigabit Ethernet (10/100/1000BaseT) is a world-first on a laptop.

MacExpo 2001 marks the first public showing of Apple's new lines of faster, improved portables. The new titanium PowerBook G4 notebooks ship with faster processors, high-speed graphics and larger hard drives. The new iBooks also feature faster chips and larger hard drives. You'll also be able to have hands-on experience of Apple's desktop Macs – the newly priced iMac range (some now available with free HP digital camera), and the Pentium-busting Power Mac G4s.

The new PowerBooks now come with G4 chips of up to 667MHz, a new system bus running up to 133MHz, speedy new ATI Mobility Radeon AGP 4X graphics, and built-in Gigabit Ethernet networking – the first time ever in a portable on any platform.

The top-end hard drive has a giant 48GB capacity, and there are new optional CD-RW slot-loading optical drives available via the online Apple Store.

Apple enhanced its hugely popular iBook line-up of consumer and education notebooks with faster PowerPC G3 processors up to 600MHz, a new system bus running up to 100 MHz, larger hard drives up to 20GB, and 128MB of RAM standard across the line.

The new PowerBook G4s and iBooks include both the new Mac OS X version 10.1 (see below) and Mac OS 9.2.1 pre-installed.
www.apple.com/uk   020 8218 1000
Stand Number: 600

Maya on OS X brings 3D to life at MacExpo 2001
Alias|Wavefront will attend MacExpo to demonstrate Maya for Mac OS X. This release of the entertainment industry's leading 3D animation and effects software package has been long awaited by Mac-using professional graphics artists. Features unique to this Mac version include support for QuickTime, tear-off menus in the hot box, and a fully Aqua interface. The return of high-end 3D to the Mac platform is a real boost to Apple, as well as showing off the robust performance hallmarks of its new Unix-based operating system. No longer do 3D artists have to purchase Windows SGI workstations. Maya works perfectly on Apple's G4 Power Macs – indeed it's specially optimized for them. The combination of Maya, OS X and the dual-processor Power Mac G4 is a 3D artist's dream setup.

"Maya is the largest, most technically sophisticated program to be built for OS X. We couldn't have done it without OS X's support of OpenGL, the high-level Carbon API, and Aqua's transparent overlay windows," says Andrew Pearce, Director of Maya Technologies.

"Mac OS X provides the kind of powerful, open environment Maya users demand with a user interface that artists love," states Mark Sylvester, ambassador at Alias|Wavefront.

"Mac OS X provides an extremely rich environment for all types of graphics applications, and we're thrilled to see leading developers like Alias|Wavefront taking advantage of Mac OS X's capabilities," said Ron Okamoto, Apple's vice president of Worldwide Developer Relations.
www.aliaswavefront.com
0800 4125 4125
Stand Number: 700

The future is here: OS X 10.1

Apple's next-generation operating system Mac OS X (pronounced 'ten') combines the industrial-level power of Unix with the refined elegance of the Mac OS. It's aimed at both the experienced Mac professional and the new consumer. Apple will be using MacExpo 2001 to show-off its new operating system, which it claims is the "future of Macintosh computing".

Mac OS X is both faster and more robust than Mac OS 9 and all Mac operating systems before that. For example, due to sophisticated memory management, if an application crashes, the rest of your Mac carries on working. And, with its Aqua user interface, it looks stunning.

Apple made its first major upgrade to Mac OS X in September, releasing version 10.1 – which it claims further improves performance, and adds several features that were missing from the original March release. Menus draw more quickly and smoothly. Applications launch two to three times faster. Finder windows are more responsive when you resize them. And OpenGL is 20 per cent faster in 10.1.

OS X's Print Centre now ships with over 200 PostScript printer description files, from companies such as HP, Lexmark and Xerox. There is also improved support for most USB printers, with automatic selection of the driver for that particular printer.

With OS X 10.1 you can create your own data CDs using CD-burning capabilities built right into the Finder. You can even

New look, new power
MacExpo 2001 is the perfect chance to try your hand at Apple's bright new operating system, Mac OS X.

add a Burn button to your Finder toolbar. A sleek new controller lets you navigate DVDs with ease, and you can choose to arrange its controls vertically or horizontally.

Windows NT/2000 and Unix-based SAMBA file servers appear right in the Finder like any other file server – making Mac OS X fluent in all of today's network languages.

■ Apple is also likely to demo its forthcoming iDVD 2 software – which, combined with the Power Mac G4's DVD-R SuperDrive, lets you create your own discs to play in standard domestic DVD players. This new version was first shown during Steve jobs' keynote speech at Macworld Expo New York in July.

Apple solutions on show

Aside from its most recently announced products, Apple staff will be able to show you the company's rich solutions for FireWire-based digital-video editing (iMovie 2, Final Cut Pro), DVD creation (iDVD and DVD Studio Pro), multimedia development (QuickTime), and music (iTunes). They will also be able to show you the benefits of signing up for Apple's free iTools services, which enable you to quickly post your favourite digital snaps and movies to your own pre-made Web site.
Stand Number: 600

Macally peripherals

Mac Accessory Centre distributes a range of top-quality Macintosh peripherals, accessories and software. This ranges from specialized replacement input devices such as keyboards, mice and other products from MacAlly, through an exclusive range of computer-related luggage products from Epac – including a range of laptop cases for the PowerBook G4 and new iBook – to small-business accounting software, Office/2. Macally makes quality accessories for Macs. At MacExpo, the company is introducing its new Optical Trackball with five programmable buttons – alongside the tiny Optical Micromouse and Airstick, its motion-sensing joystick. Also on show is Macally's iShock 2, the only game-pad with force-feedback available for the Mac.

Regular draws will be held on the stand, with prizes including Macally products, boxes of Verbatim CD-Rs, Epac computer carrying bags, and a number of copies of Office/2.
www.mac-ltd.com
0191 296 1500
Stand Number: 210/220

Adobe delivers OS X creative solutions

Adobe will be showing the latest versions of its most recently announced products, vector-drawing champ Illustrator 10 (shown in action, top right) and page-layout contender InDesign 2.0 (bottom right) – both are now optimized to work with Mac OS X. Adobe is also likely to be giving sneak peeks of its forthcoming OS X applications, as well – so don't forget to ask about an OS X Photoshop…

Macworld previewed both new products in the November 2001 issue. We tested the beta version of Illustrator, and commented: "Existing users will adore what this upgrade brings, and the OS X version looks and runs beautifully."

The company will be showing the full suite of its products (including image-editing market-leader Photoshop 6.0.1, PDF creator Acrobat 5.0, DTP veteran PageMaker 7, and Web-site editor GoLive 5.0), demonstrating how they fit in to Adobe's Network Publishing vision of delivering reliable, personalized, content anywhere, anytime, and on any device.

The decision to exhibit at the show underlines the company's commitment to the UK Mac market. Mark Floisand, marketing director Adobe UK and Ireland, told *Macworld*: "Adobe is delighted to be exhibiting at MacExpo in London. We're looking forward to a strong show."
www.adobe.co.uk   020 8606 4000
Stand Number: 300

Win a multifunction HP PSC 750 at MacLine's stand

MacLine, one of the largest and fastest-growing UK resellers, has set up the MacLine Village at this year's MacExpo. Here, show goers can explore a range of solutions from top brand names including Hewlett-Packard, Minolta-QMS, NEC-Mitsubishi, PhaseOne, Sony and more.

HP promises to show some exciting new products – including a brand-new range of inkjet printers, its price-busting A3+ DesignJet proofers, and its space-saving all-in-one multifunction devices. If you leave your business card at the HP stand, you could win a PSC 750 Multifunction device with scanner, printer and copier.

Minolta-QMS will be showcasing its leading-edge colour A3 laser printer, the Magicolor 6110GN – for every one purchased at the event, it will be giving away a free Minolta Dimage digital camera worth £400. There will also be a fabulous show-offer on the award-winning Magicolor 2200GN colour laser – available for only £1,395 (excluding VAT), a saving of over £200.

NEC-Mitsubishi offers include the stunning LCD1830 18-inch LCD TFT screen for an amazing £699 (ex. VAT), a saving of over £100.
www.macline-online.com   01223 247 111
Stand number: 150
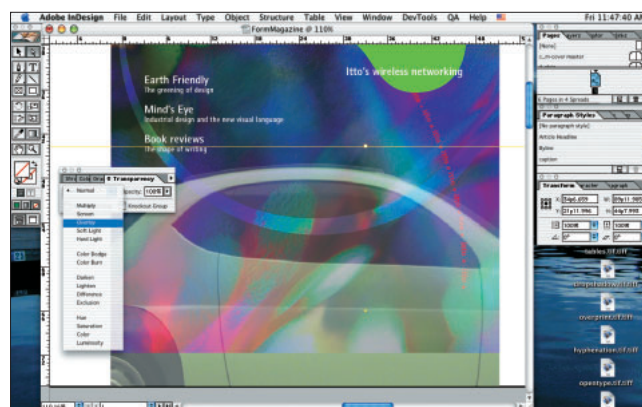
Microsoft's X Office party

Market-leading business apps updated for Mac OS X, and on-sale at show

Software giant Microsoft has been working on the development of applications for the Macintosh platform for over 15 years. The first version of Works for Mac appeared in 1985, and Office 1.0 first came out on the Mac Platform in 1989.

Microsoft's Macintosh Business Unit software team is the largest Mac team outside of Apple, and is dedicated to creating a great partnership that produces high-quality applications for Macs.

The company will be previewing its very latest OS X-native Macintosh product, Office v. X for Mac – Word (word processing), Excel (spreadsheet), PowerPoint (presentations) and Entourage (email) all updated to take advantage of Mac OS X's promised stability and reliability, and dressed up in gorgeous Aqua. Over 1,000 dialog boxes, toolbar icons and alerts have been changed to match the appearance of Mac OS X's throbbing-blue Aqua interface.

New features to Office v.X include Auto-recover (a new Undo in Excel), new Powerpoint packages, multi-selection options in Word, programmable keyboard shortcuts, and improved QuickTime movie options.

Macworld previewed Office v. X in the November 2001 issue, where we commented: "If you use Office and you've been sitting on the fence wondering whether you should move to OS X, Office v. X is a good reason to make the leap and hit the ground running".

Microsoft also has new versions of Internet Explorer and Windows Media Player for Mac on display.
www.microsoft.com/mac 0870 60 10 100
Stand Number: 460

Of mice and Macs

Contour Design sells computer peripherals and accessories, including the award-winning Perfit Mouse that comes in five right-hand and three left-hand configurations. The company is exhibiting its USB-based ShuttlePRO and the MiniPRO Ti optical mouse at MacExpo. The 13-button ShuttlePRO has a fully programmable shuttle wheel that can remember any keyboard shortcut and communicates with a range of applications, including Cubase, Adobe Premiere and Pro Tools. The MiniPRO Ti mouse is designed to complement Apple's Titanium PowerBook G4. It's a compact, accurate, optical mouse that ships with the Pack N Go carrying case. Contour has a number of special show discounts on those products, as well as G-Risers, G-Racks and UniRiser peripherals.
www.contourdesign.com   020 8731 1410
Stand Number: 130

Formac flat out

Formac provides an award-winning range of Mac monitors, making use of tubes from Sony, Mitsubishi and Fujitsu. The company also produces FireWire hard disks, CD-RW and DVD storage solutions, and Studio AV products. Formac is exhibiting its first flat-panel display, the Gallery 1740 – a 17.4-inch (viewable) TFT active-matrix display at MacExpo 2001. Formac is also exhibiting its Studio AV and FireWire storage solutions. There are special MacExpo offers available from resellers MacLine, Micro Anvika and MacWarehouse.
www.formac.co.uk
020 8533 4040
Stand number: 435

The quiet scan

Microtek is showcasing its ScanMaker 3800 at MacExpo. The "whisper-quiet" 3800 incorporates five smart-touch buttons and a new high-speed scanning system. The company is also demonstrating the ScanMaker 9800XL with triple interface, and the latest FireWire versions of the award-winning ArtixScan 4000t and 2500. Also on show is the FilmScan 3600, its newest film scanner. Microtek is offering a show goers special price on the ScanMaker 8700 – £899, including a full version of Adobe Photoshop 6.0. The ColourPerfexion colour-management solution will also be on show.
www.microtekeurope.nl   01327 844 880
Stand Number: 110

Epson gives it large

Epson will use MacExpo 2001 to exhibit its wide choice of Mac printers, scanners, projectors and digital cameras. The company is showing its large-format printers and colour lasers at the show. As a show special, visitors may bring Zip and Jaz disks containing large images to the stand, and Epson will print them – at poster size – on their large-format machines. There's a number of other special offers available at the stand, which is being run on Epson's behalf by distributor Computers Unlimited.
www.epson.co.uk 08702 416 900
Stand number: 500

MicroRent on-site

MicroRent is providing computers and on-site engineers for MacExpo's registration area, email corner and many of the exhibitors. Over the past 18 years, MicroRent has grown to become Europe's leading Macintosh and PC rental company, and now operates one of the UK's largest and most up-to-date fleets of computer hardware and presentation equipment.
www.microrent.co.uk
01494 768 768
Stand number: 510

Simplify with Softchaos

Softchaos is at MacExpo 2001to launch WorkStrip 1.5, which simplifies work processes by reducing search times, organizing separate applications, remembering previously opened documents and applications, and enabling instant previews of files. A key feature of WorkStrip is "Workspaces", which help users track files and Internet activities, gathering them into meaningful groups. Innovative features include instant previews of sound files, QuickTime movies, Flash animation and HTML files. An OS X version should be available later this year.
www.softchaos.com
020 7434 0775
Stand number: 830

Channel Dynamics digital video and storage solutions

Channel Dynamics specializes in solutions for cutting-edge broadcast and film media, as well as for home video enthusiasts. The company is at MacExpo 2001 to exhibit solutions from its key manufacturing partners, including Aurora, EZQuest, Quantum, Miglia, XLR8 and Acard. Solutions on display at the stand include those for true 24-frames-per-second video editing, fast FireWire storage, DVD-authoring, and network attached storage.
www.channel-dynamics.co.uk   0870 60 70 540
Stand number: 950

■ EZQuest (*www.ezq.com*) FireWire and USB 2.0 storage products are on display at its UK distributor Channel Dynamics' stand. Exhibited products include the Cobra+ and Cobra Slim drives, which have been developed to deliver the performance required in today's digital video-editing environments. These solutions are also practical alternatives for graphics, 3D modelling and imaging applications. Also on show is the Boa FireWire DVD-RW/CD-RW drive (pictured), which ships with Roxio Toast 5.0 Titanium. This device can be used to backup data, and to burn DVD projects. The unit is fully compatible with Apple's DVD Studio Pro.

■ XLR8 (*www.xlr8.com*) products are distributed in the UK by Channel Dynamics, and will be on display at stand 950. XLR8 has developed solutions to add dual processors to systems such as the Power Mac 9600, beige G3 desktop and mini-tower, blue-&-white G3s and first-generation G4 Power Macs. These solutions — the Velocity 66 and Velocity 100 products — are Mac OS X compatible. This enables upgraders to take advantage of true symmetric multiprocessing, pre-emptive multitasking, and other performance gains promised by OS X.

■ The Igniter video-capture solution from Aurora Video Systems (*www.auroravideosys.com*) offers the broadest range of options for capturing, editing and playing back video on the Macintosh platform. The product is fully compatible with Apple's Final Cut Pro 2.0 and Adobe Premiere 6.0. The choice of component or SDI interfaces makes Igniter a potential solution for even the most demanding broadcast or film project. The Igniter RT delivers real-time editing, along with uncompressed and compressed MJPEG-A as standard. Full YUV (a professional-level colour system) colour space and a 10-bit pro amp ensure best quality capture, rendering and playback. Support for true 24fps editing makes Igniter the leading interface card for the professional film editor.

■ Quantum Snap Servers (*www.snapappliances.com*) are market leaders in cross-platform network storage solutions — offering fast, reliable, low-maintenance network-storage solutions for Mac. These devices are easy to manage and set-up, perform happily on workgroup and enterprise networks, and are distributed in the UK by Channel Dynamics.

There are a variety of storage capacities from 40GB to nearly 1TB within a single unit. Snap Servers are managed from any Mac using a Web browser. They appear on the network as AppleShare volumes. The products feature configurable access control, maintaining data security and preventing unwanted access.

Peer at Iomega's Peerless drives

Established in 1980, Iomega has become well known as a leading provider of storage solutions — especially removable-disk systems. The company is demonstrating all its products at MacExpo, including the popular Zip, new Peerless, musical HipZip digital-audio player, and the ZipCD CD-RW drives. Also on show will be Iomega's USB and FireWire Predator CD-RW drive. The company is offering some special offers at the show.
www.iomega.com/europe
01628 822 444
Stand number: 350

Scan a few fonts at show

CPS is showcasing a host of products from Heidelberg and Linotype Library. The company will be demonstrating the complete range of Heidelberg desktop scanners, including (for the first time in the UK) the Linoscan 1800, 2200 and 2650 scanners.

The company's Fontshop will focus on the latest typefaces from the world's leading font manufacturer, Linotype Library, as well as fonts from other libraries.

The A3 Heidelberg Linoscan 2650 debuts at the show. It offers both SCSI and FireWire connectivity, with resolutions up to 2,400-x-2,400dpi. This scanner costs £5,495.

The Linotype Library of fonts has a dedicated area on the stand, and exhibition goers can discuss font requirements with CPS Fontshop experts. Among the exclusive range of offers available for visitors will be the new version of the Linotype FontExplorer 1.6 Gold Edition Library and TakeType 3 font selection, featuring more than 130 exclusive fonts.
01242 285 100
Stand Number: 400

Hermstedt launches WebShuttle II

At MacExpo, Hermstedt is introducing new versions of its LeoShare and Webshuttle products. Webshuttle is entering a new era, facilitating Internet access, email, fax, IP file transfer and remote access all in one. The new call bumping function in Webshuttle II enables users to surf the Internet at 128kbits/s using both B channels, and yet still be available for incoming or outgoing phone calls, through the automatic release of a B channel. Version 2 of ISDN solution LeoShare will also be launching at MacExpo. Running on a Mac server, equipped with one or more Hermstedt ISDN adaptors, every computer in a local network can use the ISDN adaptor via the LeoShare server without it being installed on the client itself.
www.hermstedt.co.uk   020 7242 4060
Stand Number: 250
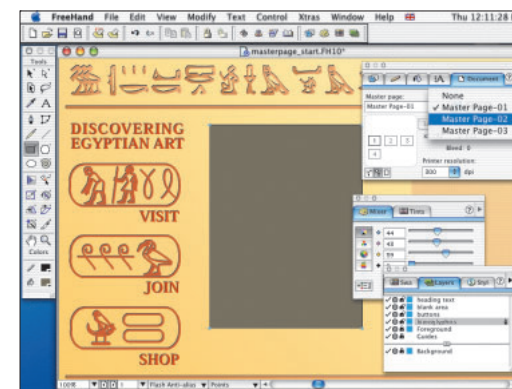
Macromedia's Web on show

Macromedia is one of the leading providers of software solutions that enable designers and developers working in the Mac community to create compelling dynamic content and applications for the Web.

At MacExpo, Macromedia will be demonstrating its portfolio of award-winning products including vector-drawing application FreeHand 10, Web animator Flash 5, Web-site editor Dreamweaver 4, and Web-graphics editor Fireworks 4. Macromedia will also be demonstrating how dynamic content can be created easily on a Mac using Dreamweaver UltraDev 4.

Each of the 30-minute seminars will provide Mac users with information and solutions on maximizing the potential of the products within their work environment and enhancing their work-flow through applications, such as the recently announced SiteSpring 1.0.
www.macromedia.co.uk   01344 458 600
Stand Number: 40

Latest from AM Micro

With a mission to "source and distribute innovative products," **AM Micro** delivers products from a portfolio of companies, including Digicom, iProof Systems, iRez Technologies, Keyspan, MCE Tech, PowerLogix and VillageTronic. The company will be bringing the newest products in its portfolio to the show.

Shown in public for the first time at this show are: Digicom's new high-speed Palladio USB GSM kit; iProof's PowerRIP 2000 for OKI printers; iRez StealthFire FireWire Web cam; Keyspan's newly-introduced USB Hub and USB 2.0 connectivity solutions; and MCE Transport Pro FireWire and USB pocket drives. Also exhibited at the show will be the iForce G4 upgrade for iMac from PowerLogix, and VillageTronic's MPDD+ desktop doubler graphics card.
www.ammicro.co.uk   01392 426 473
Stand Number: 200

Micro Anvika has 15 years' experience as an independent retailer of Mac and PC hardware, software, peripherals and accessories. It stocks over 2,500 different products in six stores in Oxford Street, Tottenham Court Road, Chenies Street, London, and the Whitgift Centre in Croydon. There will be special offers available at MacExpo 2001, from Swann, Hauppauge, Apple, Symantec, Microsoft, Epson, Kensington and NEC.
www.microanvika.com   01494 768 768
Stand Number: 235

Alta kicks off MacExpo

Alta Technology will be showing two new products from Griffin Technology: the PowerWave USB audio adaptor and PowerMate universal audio controller. PowerWave USB is designed with music lovers in mind, combining incredibly high-quality audio recording and playback capabilities with a powerful built-in amplifier. It has RCA, audio input and output connectors, a built-in USB hub, an Apple Pro speaker connector, and standard hi-fi speaker connectors.

The PowerMate is a USB device that controls your Mac's volume and audio applications. It supports soft power on, and can be used as a universal input device and game controller. It has a programmable button that can support tasks from muting audio output, to marking in and outpoints in iMovie, Final Cut Pro, Premiere, After Effects, and other video-editing applications.

Alta Technology will also show KickOff from Sophisticated Circuits. KickOff (above) will reboot your Mac in the event of system hangs and application freezes.

The company also sells training CDs from VTC, and software for using PDF in the pre-press and document-management market.
www.altatechnology.co.uk
020 7622 6606
Stand number: 955

Learn with MacAcademy

MacAcademy, a leader in computer training Since 1987, provides award-winning training CD-ROMs and videos. You can catch the latest products at including products covering Acrobat 5.0, Pre Press to Print, Flash, Premier, DreamWeaver, FileMaker 5.5. Visit the stand and receive a discount of over 20 per cent if you purchase any complete set of training CDs or videos. For example, this special discount reduces the total price of the six-CD FileMaker Pro 5 series from £222 to only £177, plus VAT.
www.macacademy.co.uk
01953 457 600
Stand Number No 540

See the CU crew

Computers Unlimited is out in force at MacExpo 2001 to showcase products from many of its key suppliers. Its stand is the venue for a series of 25-minute demos of all the latest products.

Connectix will show Virtual PC and DoubleTalk. FileMaker will exhibit FileMaker Pro, the cross-platform data-management system. Corel's OS X-compatible graphics range, includes Corel Graphics Suite 10, Bryce 5 and KPT. Also on show at CU's stand will be Wacom's graphics tablets, including its Graphire2 (pictured).
www.unlimited.com
020 8200 8282
Stand number: 80

Bar-gains galore

MacWarehouse, the UK's largest Apple reseller, is sponsoring the central show bar, right next to its stand. The stand overlooks the show, with a view on the entire Mac marketplace.

Microsoft is teaming up with MacWarehouse for an exclusive launch-offer on the new Mac OS X-native version of its Office suite of business applications (see page 101).

www.macwarehouse.co.uk
08705 168 740
Stand Number: 745

Imaging supplies

The Cartridge Company is one of the leading computer imaging supplies companies supplying original and remanufactured printer cartridges, speciality inkjet papers, CD-R and magnetic media direct to professional users throughout the UK.

It specializes in quality remanufactured cartridges that carry an "as original" performance guarantee and deliver significant cost savings, together with an environmental contribution through recycling.

MacExpo attendees visiting the Cartridge Company stand will receive £10 discount vouchers and free entry into the company's "Win a Case of Champagne" draw.

www.thecartridge.co.uk
0800 08 08 08
Stand number: 520

Stiched up

RealViz creates image-based content for film, broadcasting, gaming, architecture, Internet and CAD. Stitcher 3.1 creates panoramas and immersive environments by combining horizontal and vertical overlapping photos taken from one location into a single high-resolution panoramic image. Stitcher 3.1 has improved Thumbnail Rotations and 20 per cent faster rendering.

ImageModeler 3.0 is an image-based modeller that simplifies building photo-real 3D models. ImageModeler 3.0 has a new interface and contextual menus, for improved calibration workflow and easier camera navigation.

www.realviz.com
01727 810 203
Stand Number: 380

3D Mac speed

(Right) Marble marvel
Eovia will also showcase Carrara Studio, which it released in June 2001. This combines 3D solutions Ray Dream and Infini-D with a number of new features, and is a solution for modelling, animation, rendering, and special effects. Eovia claims that it offers rendering speeds up to 11 times those of its predecessors.

Recently merged with TGS, Eovia is a 3D company run for and by 3D enthusiasts. It aims to deliver professional products that are easy to learn but powerful. Laurent Billy, Eovia's strategic marketing manager said: "The Mac has always been the preferred choice for digital artists. Eovia products are perfect 3D companions for all major graphic creation titles on the Mac."

At MacExpo, Eovia exhibit Amapi 3D, which was originally developed exclusively for the Mac. Now up to version 6.1, this popular 3D package offers the full functionality and modelling speed it's famous for – with many new modelling tools, an enhanced rendering interface and 3D for the Web, including support for Flash and Shockwave 3D.

Eovia is offering a special show discount at MacExpo 2001, chopping up to 30 per cent off the price of Amapi 3D and Carrara Studio.
Eovia   www.eovia.com   +33 (0) 556 13 37 77
Stand Number: 15
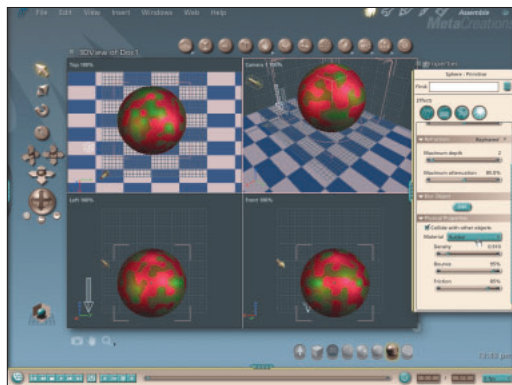
SmartDisk and hard drive

SmartDisk is launching several new products at MacExpo 2001 – including the world's smallest and lightest external hard drive. The size of a credit-card, it offers 5GB of storage.

A number of new additions to the SmartDisk VST range will also be revealed at the show, all of which have been specifically designed to complement Apple's PowerBooks and iBooks. It will also be exhibiting card readers, hard drives and other storage peripherals. SmartDisk's products are designed to enable the transfer, storage and management of digital music, video, images and data.
www.smartdisk.co.uk
01252 530 960
Stand number: 10

Dataworld, in association with mac-1, is exhibiting the Media Asset Management (MAMS) system. MAMS is a secure data-archiving and retrieval ordering system. Dataworld will also demonstrate new Apple RAID systems.

Clients send all their data to mac-1, where a copy is catalogued and archived on Dataworld RAID systems, and published on a secure Web server. Tape copies of the data are rotated regularly by Securicor to a secure bank vault for maximum security.
www.dataworlduk.com
01952 299 944
Stand number: 245

Tough disc storage

Duraweld is showing Compupack, its latest solution for archiving, storing and packaging CDs and DVDs, as well as its range of CD sleeves. CD/DVD storage binder Compupack was developed for Macintosh users with too many CDs and DVDs and insufficient shelf space, and for those whose CDs lack cases. Each binder can store up to 50 CD/DVDs, and are virtually unbreakable featuring Clearview Safety-Sleeves with pockets for index cards. Duraweld's Multipacks are also on display – available in a variety of bright colours. Each one combines five binders with a self-standing slipcase. The company also supplies user-branded binders for promotional material.
www.duraweld.co.uk   01904 610 077
Stand Number: 360

LaCie makes big things smaller

LaCie will be showing off the latest of its storage and display products at MacExpo 2001. These include the latest, and fastest DVD-RW and combination DVD-RAM and DVD-R drives, as well as its distinctive dark-blue monitors. The company's popular USB/FireWire PocketDrive portable hard disks offer an unrivalled sustained transfer rate that can reach 35MB/sec when using the FireWire interface. The current series is available in 10GB, 20GB, 30GB and a new 48GB PocketDrive, which can store more than four hours of digital video and over 70 CD-audio images. The LaCie Network Box allows workgroups to share CDs through the network with unmatched simplicity.

LaCie's Photon18Blue flat-panel monitor is designed to meet the specific requirements of today's graphics professional, with advanced wide-angle viewing technology and a precise natural colour matrix for highly accurate image display. With a maximum resolution of 1,280-x-1,024 at 60Hz, the Photon18blue delivers sharp, bright pictures, with vivid, accurate colours and zero distortion.

LaCie will give live demonstrations on its booth including how to optimize RAID configurations to increase transfer rate and data security, how to calibrate a monitor to ensure maximum colour accuracy, and how NAS technology can provide an easier and faster method to share data across a network.
www.lacie.co.uk   020 7872 8000   Stand Number: 640

Wireless wonders

Proxim delivers a range of multi-standard wireless-networking, Ethernet and HPNA solutions via product families such as Symphony, Skyline, Netline and Homeline. The Stratum product family offers a range of broadband-access solutions and building-to-building networking connectivity for enterprises and service providers.

Proxim is demonstrating its new Skyline wireless broadband gateway and Skyline USB Adaptor at MacExpo.

As a multi-standard wireless LAN platform, Harmony (below) offers built-in support for IEEE 802.11b, IEEE 802.11a, and OpenAir, and is designed to support new standards such as IEEE 802.11g, HiperLAN/2, and Bluetooth.

Proxim will be providing wireless-networking support for some of the vendors present at the show, as well as in the registration area.
www.proxim.com   01494 563 737
Stand Number: 430

Extensis packs its Suitcase

Extensis develops and supports software and Internet-based services for design and marketing professionals. From design through to output, Extensis' products and services are designed to make the process of creating, editing and managing materials for print and electronic publishing more productive and efficient.

Its products include Suitcase 10, the font-management solution that helps users find the right font quickly; Portfolio 5.0, the digital asset-management solution; and Preflight Online, the Web-based service that allows users to check files for potential printing and pre-press errors before submitting them for output. The company also manufactures a range of plug-ins and XTensions for Photoshop and QuarkXPress.
www.extensis.com   01604 636 300
Stand number: 450

Free camera with printer

Minolta-QMS UK is a leading manufacturer of high-performance colour and monochrome printing solutions for office automation, electronic publishing, graphic design, and advanced imaging applications. The company will demonstrate its new over-size A3 colour laser printer, the £2,995 magicolor 6110GN.

For a limited period only, Minolta-QMS is giving away a Minolta Dimage E203 digital camera (worth £399) with every magicolor 6110GN purchased.
www.minolta-qms.co.uk
01784 442 255
Stand Number: 150

I(BM) said "ViaVoice!"

IBM Voice Systems is demonstrating the latest version of its ViaVoice for Mac OS X at MacExpo 2001. This will be the first time that the new incarnation of the application has been on show to the public. ViaVoice for Mac OS X is the latest version of IBM's award-winning and best-selling speech-recognition program – complete with OS X Aqua user interface. New features include the ability to dictate directly into Mac applications. It's also possible to command and control using voice, as well as to define additional commands for keyboard shortcuts and AppleScripts. The application now has an enlarged vocabulary of 150,000 UK English words, improved recognition accuracy, and is faster for individual users to set up. The £99 product ships with a noise-cancelling USB headset microphone and 30-days free telephone support form IBM.

www.ibm.com/software/speech/uk
01475 555 047
Stand Number: 150

Mac User Groups help

The Macintosh User Groups are at MacExpo 2001 to inform visitors about the benefits of joining a MUG (Macintosh User Group) and the help and friendship that can be found for beginner and experts. They do this by helping people find their nearest MUG, co-ordinating activities in Great Britain & Ireland, and building relations between MUGs both here and in Europe.

The stand will be manned by members of MUGs from all over Britain and Ireland, so come and say hello.

Last year, the MUGs put many people in touch with their local groups, and even resuscitated the old groups in Cambridge and Brighton. If you fancy starting your own local MUG, you'll get all the help you need here.
www.lmug.org.uk
Stand Number: 820
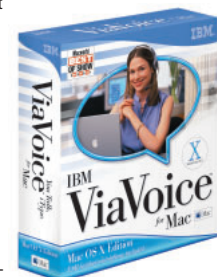
Final Cut Pro 2
Expert guide

Outgrown iMovie? It's time to harness the power of Apple's professional video-editing software. By Jim Heid and Tom Wolsky

Director Alfred Hitchcock once said, "Drama is life with the dull bits left out." In his day, creating that drama involved slicing film, hanging individual shots in fabric-lined bins, gluing those shots together, and scrawling on them with a grease pencil to call for effects such as fades. Today, you can cut out the dull bits – or more accurately, assemble the interesting ones – using your Macintosh and affordable video-editing software. And for a growing number of professional and independent video editors and filmmakers, Apple's Final Cut Pro is the editing program of choice.

The £700 Final Cut Pro 2 (★★★★/8.2; Reviews, May 2001; Apple, 0800 039 1010) has a wealth of features that approach those in editing workstations with five-figure price tags, such as Avid Technology's Media Composer family. Apple's latest release is as adept at working with low-cost MiniDV-format camcorders as it is at controlling high-end DigiBeta broadcast gear. It's suitable for creating both movies for Web sites and feature films for the silver screen. And its power is wrapped in an elegant, responsive interface that looks and works much like that of a high-end Avid system.

To help you take full advantage of Final Cut Pro's power, we've organized tips to use throughout the video-production process: setting up your system, capturing footage, editing, applying effects, and outputting.

Preproduction

The entire editing process will go more smoothly if you keep the demands of video editing in mind as you set up your system.

A solid foundation Although Final Cut Pro 2 will run on a 300MHz G3 Mac, it's much snappier on a G4 system because this version is highly optimized for the G4's Velocity Engine circuitry.

A multiprocessor system is better still: a 533MHz dual-processor Power Mac G4 renders images faster than a 733MHz single-processor machine. Final Cut Pro demands a Mac with at least 256MB of RAM – and more memory will boost performance.

Have enough room All modern high-capacity hard drives meet the 3.6Mbps data-transfer rate that FireWire-based DV camcorders require. But that doesn't always mean you can get by with your Mac's built-in drive; DV-format video gobbles up 216MB per minute.

What's more, a hard drive can have trouble playing back a project containing multiple audio tracks, transitions, and effects. As the drive's heads seek from one preview file to another while reading several tracks of audio, playback may suffer dropped video frames and stuttering sound, especially if the drive has been fragmented by the addition and removal of files.

Consider using a second, dedicated hard drive to store captured video. If you keep your System Folder and the Final Cut Pro application on one drive and your work on another, you'll reduce the need for seeking, improving your system's overall performance and lowering the risk of playback problems.

To direct Final Cut Pro to use a drive other than your startup drive for captured and rendered video clips, choose Preferences from the Edit menu and then use the buttons under the Scratch Disks tab to guide Final Cut Pro to your chosen media drive.

Use another screen Final Cut Pro can display your work on a FireWire camcorder's LCD screen, but it can do so better on a television monitor connected to the camcorder. Many analogue capture products, such as Matrox's £699 RTMac (www.matrox.com; 01753 665 624), also hook up to an external TV monitor. A TV screen is preferable to Final Cut Pro's relatively tiny Canvas window for previewing your work, and it's essential for accurately assessing and correcting colour.

You can even add a second computer monitor to display some of Final Cut Pro's many windows. To cut down on scrolling and zooming, put your Timeline window on the wider monitor and stash lesser-used windows on the other.

Arrange your windows Final Cut Pro provides several preset window arrangements that you can customize. You might use the Standard arrangement when logging and capturing video or working on a PowerBook; it provides large Viewer and Canvas windows. When you're in the editing trenches, switching to the Wide arrangement will give you a bigger Timeline window.

The Viewer and Canvas windows are smaller in Wide mode, but if you're using an external TV monitor, this won't be a problem. The Standard arrangement, with its larger Canvas window, is always just a keyboard shortcut away: control-U.

You can also save your own window arrangements – handy if you're using two monitors, or if you simply prefer a custom window layout to one of Final Cut Pro's. Just press the option key and choose Set Custom Layout 1 or Set Custom Layout 2 from the Window menu's Arrange submenu.

NAOMI SHEA

Creating video in text

The ability to composite (or combine) video layers is a feature normally found only in dedicated compositing programs such as Adobe After Effects. But Final Cut Pro supports many standard Photoshop compositing modes (such as Add and Multiply), and it can track the luminance value and alpha channel (the transparency information) of a layer. These capabilities permit effects such as video footage inside text.

Step 1 Place your background on the V1 track. In our example, we've used a solid-colour matte created in Final Cut Pro, but a Photoshop texture, a gradient, a still image, or even another video clip would also work.

Step 2 Add your text to the V2 track. Using the Text Generator pop-up menu in the lower right corner of the Viewer window, create a large, bold block of text that takes up most of the screen (A); this will allow more video to show through. With the Text Generator's Aspect control (B), you can make the characters taller. Adjust the Y origin point to position the text below the screen's default centre point.

Step 3 Put the video – the footage that will show through the text – on the V3 track (C).

Step 4 With the clip on V3 selected, choose Travel Matte-Alpha from the Composite Mode submenu of the Modify menu.

After you've done that, Final Cut Pro's Text Generator creates an alpha channel, and the clip on V3 takes its alpha-channel information from the text block on V2. Just render the effect, and presto – your video is playing inside your text (D).
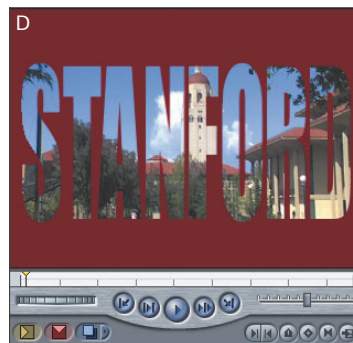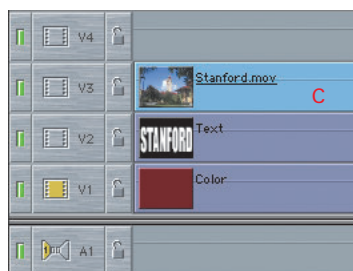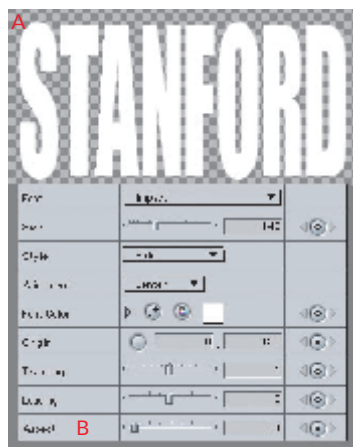
Select and modify settings When you embark on a project, you must specify settings for audio and video capture, camcorder control, video playback, and more. Configuring these correctly is critical in avoiding problems such as dropped video frames or distorted or out-of-sync audio.

Final Cut Pro's settings are scattered across numerous dialog boxes, all of which have multiple tabs containing several options. Fortunately, Final Cut Pro 2's new Easy Setup options usually eliminate the need to venture into these dialog boxes at all.

An Easy Setup is a collection of settings stored under a single name; when you choose one (via the Edit menu), Final Cut Pro applies a dozen or more settings in one fell swoop.

Final Cut Pro includes Easy Setups for several common production scenarios, but you may have to modify certain settings. To capture footage shot using 32KHz audio rather than the preferred 48KHz, for example, you'll need to select the DV NTSC 48KHz Capture setup and then click on the Duplicate button. In the dialog box that appears, choose 32KHz audio. Don't forget to edit the new setup's name and description to reflect your changes.

Stop whining You've captured some DV-format video and disconnected your camera. Now every time you launch Final Cut Pro, it tells you that the "external device is missing."

To eliminate this annoying message, first choose Audio/Video Settings from the Edit menu. From the Device Control Preset pop-up menu that appears, choose Non-Controllable Device. From the External Video menu, choose None. Now click on the Create Easy Setup button, enter a setup name and description, and deselect the Enable Verification Of Device Control In First Start Dialog option. Finally, click on the Create button and type in the new Easy Setup's name.

You can use this setup when you don't want Final Cut Pro to look for your camera. When you reconnect the camera, simply switch back to your previous setting.

Capture strategies

To edit video, you have to bring it into your Mac; here are some tips on Final Cut Pro's capture features.

Dropped frames Many users who upgrade to Final Cut Pro 2 find that it aborts when capturing from a DV device. Because of a long-standing glitch with QuickTime captures, the Mac's FireWire interface often misses a few frames and duplicates others as it starts to capture DV. Final Cut Pro 2 interprets this as dropped frames and therefore aborts the capture.

To prevent this, tell Final Cut Pro to not abort on dropped frames: Choose Preferences from the Edit menu, and then deselect the Abort On Dropped Frames option.

If Final Cut Pro reports dropped frames after you've captured a clip, check the clip's properties (control-click on the clip in the Browser window and then choose Item Properties from the contextual menu). If you see an unusual frame rate, such as 23.483 frames per second (fps), instead of the proper 29.97 fps, chances are that a problem in your system—such as a heavily fragmented hard drive – is causing dropped frames.

Log and capture Final Cut Pro's device-control features can save you hard-drive space by logging and capturing only those portions of a tape you think you'll use. In the Log And Capture window, specify which clips you want, and click on the Batch Capture button; then take a break while Final Cut Pro does all the work.

And to save you time and spare your tendons, familiarize yourself with Final Cut Pro's keyboard shortcuts (see "Essential keyboard shortcuts" for a list).

By default, Final Cut Pro prompts you to name individual clips as you log them. If you'd rather name clips after you've batch-captured a group of them, deselect the Prompt option in the Log And Capture window.

Love handles   If you disable the Abort On Dropped Frames option, consider padding your captured clips with handles that are a few seconds long. Final Cut Pro can add time to the beginning and end of each clip; if, as is likely, dropped frames occur at the very beginning of a clip, they'll be in the in-point handle.

To add handles, click on the Batch button in the Log And Capture window. In the resulting Batch Capture dialog box, be sure the Add Handles option is selected; then enter a timecode value in the adjacent text box to set the duration.

Alternative to logging   Final Cut Pro controls DV camcorders with aplomb, but most DV camcorders don't lend themselves to the demands of batch capturing. Delays of a couple of seconds each time the camcorder switches from, say, rewind mode to playback mode are common. And all that starting and stopping can take a toll on the tape-transport mechanisms in consumer-grade camcorders.

If you have sufficient hard drive space, it's better to simply capture large chunks of video all at once and then divvy them up into separate subclips. A subclip is a kind of virtual clip: it simply points to a section of footage in another clip, yet you can manipulate it as you can any other clip.

Final Cut Pro 2 has some slick new features that make this process easy with a DV camcorder. You can even use Final Cut Pro 2's terrific media-management features to organize assets and reclaim hard drive space.

First, use the Log And Capture window's Capture Now button to grab a chunk of video; then drag the footage to the Browser window to save it. With the footage still selected in the Browser window, choose DV Start/Stop Detection from the Tools menu. Final Cut Pro will scan the footage and set markers at each scene break (see "Divide and conquer").

To create subclips, select these markers and then choose Make Subclip from the Modify menu (or press ⌘-U). Use the Browser window to give each subclip a descriptive name. Now you can open and work with any scene in the Viewer window by double-clicking on its name. And don't worry if you find yourself needing a bit more footage from the master clip; with your subclip selected, choose Remove Subclip Limits from the Modify menu to gain access to the entire clip.

In the cutting room
Among software-only solutions, Final Cut Pro alone provides the kind of industrial-strength editing features that serious video producers demand. These let you tweak edits with single-frame accuracy, manage the gigabytes that make up a large project, and more.

Edit efficiently   Video-editing programs don't force you to work in a linear, beginning-to-end fashion – that's why they're called nonlinear editors. You can trim clips either before or after adding them to the timeline. You can add transitions and other visual effects as you edit, or apply them at the end of the entire process. And you can tackle individual scenes in any order.

Still, it's more efficient to perform editing tasks in a certain way. For example, we like to tweak the lengths of clips before they're added to the timeline. (Open a clip in the Viewer window, and as it plays, press I to set its in-point and O to set its out-point.)

Similarly, you might prefer to flesh out the overall structure of scenes by creating a rough cut in which the clips are in their final order, but their lengths aren't precisely trimmed and no effects or transitions are applied. This lets you concentrate on establishing the rhythm of the project as a whole, and it eliminates the waste of rendering effects that may change later.

For some ventures, your editing will often be determined by the audio: with a documentary, for example, you might cut to show different scenes of a historic site as a narrator describes them. In such cases, lay out a rough audio bed first – for instance, add the final narrative audio to the timeline – and then edit your visuals to fit.

Managing bins   In Final Cut Pro you can organize your media assets – audio and video clips, still images, and the like – into folder-like bins. Using multiple bins is a great way to bring order to the hundreds of assets that make up a lengthy project.

The nature of your undertaking will influence how you use bins. For a wildlife-documentary project, you might create subject-oriented bins: ocean shots, bird close-ups, and so on. For narrative films, each scene or act might have a separate bin. You could also make a bin to hold the original shots that you captured and later divided into subclips. You can put bins inside other bins, but don't go overboard: locating an item that's buried too deep can be difficult.

Final Cut Pro normally sorts the list of a bin's contents by name. The problem with this is that when you rename an item, it may jump to a different location in the list, becoming hard to find in a bin with many items.

If you want renamed items to stay put, you can sort your bins' contents by a different criterion, such as an unused label column. (To change the sort order, click on the heading of the column by which you want to sort.)

Sequence strategies   One Final Cut Pro advantage that you won't find in Adobe Premiere is the ability to divide your projects into multiple sequences, each with its own timeline. You can even nest sequences, putting one within another.

Nested sequences make it far easier to create certain kinds of special effects. An example: after editing your movie, you decide it would look better in letterboxed format. Instead of applying Final Cut Pro's Widescreen filter to every shot in your movie, you can just select them all and nest them into another sequence (choose

Sequence: Nest Items). The new sequence will appear in the Timeline window as if it were a single clip, so you can apply the Widescreen filter to all its contents with just one trip to Effects menu.

Nesting sequences also makes sophisticated compositing (combining video layers) possible. If you nest a series of shots in one sequence, it becomes easy to layer and otherwise tweak those shots using Final Cut Pro's compositing and effects features.

Multiple sequences have other organizational benefits. Dividing a lengthy project into several sequences makes it easier to move edited scenes around within the larger structure of a project – especially helpful in documentary work, where you might want to experiment with different structures or versions. It's also valuable when you're editing a project while it's still being shot, since scenes can more easily be rearranged as new ones come in.

Editing shortcuts   Final Cut Pro provides a dizzying array of keyboard shortcuts, but the most efficient technique is often a combination of the mouse and keyboard. Say you've specified the in- and out-points for a clip and you're ready to add it to the timeline. With the timeline's playhead positioned where you want to insert the clip, press F9, the keyboard shortcut for an insert edit. Now double-click on the next clip in the browser, set its in-and out-points, and press F9 again.

To use Final Cut Pro's current default transition between the clip you're adding and the one to the playhead's immediate left, press shift-F9. To replace the footage at the playhead (an overwrite edit), press F10 or, to overwrite with a transition, press shift-F10.

Similarly, you can use the numeric keypad along with the mouse to make precise edits. Say you want to perform a two-second rolling edit. (A rolling edit adds footage to one clip and subtracts an equal amount from the next clip, preserving the overall length of a sequence.) In Final Cut Pro's tool palette, select the rolling-edit tool (or just press R). Next, select the edit point that separates the two clips. Finally, type -200 and press the return key.

The ability to type time-code values directly into the Timeline window makes possible all manner of tricks. To move a clip four seconds later, select the clip, type +400, and press return. To jump to the timeline's two-minute mark, deselect all clips (press ⌘-D), type 2... (that's 2 followed by three periods), and press return.

Transitions and effects
Of course, Final Cut Pro has the standard array of video transitions – dissolves, wipes, irises, and so on. But it also provides some productivity-boosting variations. And the strength of its video-effects and compositing features means you can often do without a dedicated motion-graphics package such as Adobe After Effects.

Optimize your display   If you frequently work with a specific type of transition – dissolves, for instance – create a separate tab in the Browser window that shows only dissolves.

In the Browser, click on the Effects tab, and then double-click on the Dissolve folder. Final Cut Pro opens a separate window containing just the dissolve transitions. Drag that window by its tab into the Browser window, and it becomes another tabbed window in the Browser. Now you can access dissolves simply by clicking on the Dissolve tab.

Customize transitions and filters   Say you're working on a wedding-video project that uses a lot of Page Peel transitions between still images. Build your custom Page Peel with just the right curl, a splashy bit of highlight, and a backing that matches the peach-coloured roses in the bride's bouquet. Now drag that transition from the Viewer window into the Favorites bin of the Effects panel. Rename it Peach Peel, and you can use it throughout this wedding project and future ones.

To designate a default transition, control-click on your choice in the Effects browser and then choose Set Default Transition from the contextual menu.

You can also create custom effects filters. Apply the filter to a clip and tweak its settings as desired; with the clip selected, choose Make Favorite Effect from the Modify menu. Then go to the Effects browser and give the filter a descriptive name.

Watch as you tweak   When you're adjusting a filter's settings in the Canvas window, you can't see the effects of those adjustments on your video clip. The solution: drag the Video tab out of the Viewer window and create a separate window for it. This way, you can see results as you tweak the filter's settings.

Timeline tweaks
Alternatively, you might want to drag the Filter tab out of the Viewer window and down to the Timeline window. This is useful if you plan to modify a filter's settings over time – for example, to have a clip get progressively blurrier. You'll have a wide Filters window in which you can set keyframes to animate the filter.

Falling short   You add a transition, but you don't get the results you expect – perhaps you wanted a three-second cross-dissolve but Final Cut Pro gave you one that's 2 seconds and 4 frames long.

This usually happens because there aren't enough video frames in the outgoing and/or incoming clips to accommodate the transition you wanted – a common source of confusion for Final Cut Pro newcomers.

Titling   Final Cut Pro's titling features are not among its finest attributes. The titling effects, or text generators, can't use PostScript fonts, and they limit you to one font, size, and style per title. Nor will they let you manually adjust the spacing between characters – tuck a lower-case o beneath a capital T, for example.

Some text generators have an automatic-kerning feature that tightens up character spacing overall, but avoid it if your content will be distributed on VHS tape. Automatic kerning tends to space characters tightly, which can make them difficult to read.

Although its text generators are weak, Final Cut Pro's ability to combine, or composite, video layers makes it easy to create special titling effects. (For an example, see "Creating video in text.")

After Effects plug-ins   One of the best additions in Final Cut Pro 2 is actually a third-party product. Boris Script Ltd, an After Effects plug-in found in the Extras folder on the Final Cut Pro 2 CD, is a scaled-down version of Boris FX's Graffiti titler. It's a great tool with none of the limitations of Final Cut Pro's text generators: with it, you can mix and match fonts and styles, kern characters, and even set tabs to create small tables.

Titles that span clips   It's common for a superimposed title to run for more than one clip – and a lengthy, scrolling title might span numerous shots. But applying Boris Script to multiple individual shots is a lot of work, and you can't do it for animated titles. What's more, if you change a shot to which you applied Boris Script, the title will disappear and you'll have to reapply it.

Here's a better approach: First, create a slug – a black clip that you can use as a placeholder for other clips or to perform special tricks – and add it to the second video (V2) track, above the clips that it
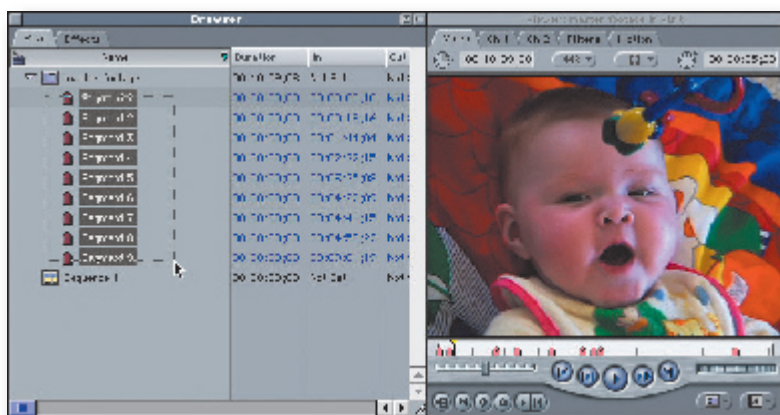
Divide and conquer
You can use Final Cut Pro 2.0's scene-detection features, such as the DV Start/Stop Detection and Make Subclip commands, to divide DV footage into separate clips.

will be superimposed over. (To create a slug, use the Generators area of the Effects browser or choose Slug from the Generators pop-up menu in the Viewer window.) Apply Boris Script to this slug. Next, with the titled slug visible in the Viewer window, click on the Filters tab and deselect the Composite On Original option.

Now change the slug's duration to match the length of the clip or clips that the title will span. To fade the title in and out, use the opacity controls under the Filters or Motion tabs.

Output options

The final step in production is to record your edited project back to videotape and compress it for Web or CD-ROM delivery – or perhaps both.

Use the spacebar Final Cut Pro provides several ways to output to tape, but the easiest and most reliable is simply to put your video deck in Record mode and then press the spacebar to play your sequence.

Before you proceed, be sure all transitions, filters, and effects are rendered at the Hi-Res setting – lower-resolution settings you may have used to preview your work won't look good on a TV. If you have numerous audio tracks or effects, mix your audio down to a stereo pair to prevent stuttering and other problems caused by an

overworked hard drive. (Choose Mixdown Audio from the Sequence menu.)

This method of outputting to video won't incorporate any extras, such as colour bars, audio test tones, or countdown footage. If you need those – say, for a duplication house or a broadcaster – add them to the beginning of your sequence. This is another occasion when multiple sequences come in handy: you can create a standard "beginning of tape" sequence to insert at the start of a sequence before you record it to tape.

Print To video A more sophisticated means of outputting a project is the Print To Video command. It will add extras such as colour bars for you, and it can also record an identification message, called a slate, to run prior to the sequence's content. By default, the slate text is the name of the clip or sequence you're printing to video. To change it, choose Text in the Print To Video dialog box and then type in your desired text.

Another option is to use an image file for the slate: in Photoshop, create a custom slate with your company logo on it, for example; then choose the File option in the Print To Video dialog box, click on the file-chooser button, and select the file. You can even have an audio slate: in the file-chooser dialog box, select Sound Files from the Show pop-up menu, and then navigate to the sound file.

Although the Print To Video command offers more output options, we recommend using the simpler record-and-play approach – Print To Video isn't always reliable. Some users have reported dropped frames, others have encountered missing audio channels, and still others have described random glitches. Most Final Cut Pro gurus advise simply playing your sequence while you record it.

Edit to tape Use the Edit To Tape output method for professional-level features, such as the ability to cleanly replace a shot in the middle of a tape without having to re-record the shots around it. Editing to tape requires a video deck capable of frame-accurate insert editing (a Betacam or DigiBeta deck, for example). These connect via an RS-422 serial interface and use different device-control protocols than FireWire-based DV devices do.

Go beyond TV Final Cut Pro 2 includes Media 100's Cleaner 5 EZ, a scaled-down version of the £299 Cleaner 5 compression utility (Computers Unlimited, 020 8358 5857). You can use Cleaner 5 EZ to prepare your video for the Web or for CD-ROM distribution.

Before you compress a sequence in Cleaner 5 EZ, choose Final Cut Pro Movie from the editing program's Export submenu (located under the File menu). In the Export dialog box, be sure that the Make Movie Self-Contained option is not selected – doing so will dramatically speed up the export process and save hard-drive space.

Note, however, that this requires the file you're exporting and its original media to be on the same machine. If you plan to be doing your compression on a different computer, select the Make Movie Self-Contained option. Then after you've exported the movie, open Cleaner 5 EZ and compress it.

The last word

Final Cut Pro has helped bring video-editing tools to the masses, but it hasn't changed the arts of editing and filmmaking at all. As you master this remarkable program, remember that every shot, every cut, every transition, and every effect should contribute to the story you're trying to tell. And bear in mind another of Hitchcock's famous quotations: "The length of a film should be directly related to the endurance of the human bladder." **MW**

Contributing Editor Jim Heid (**www.jimheid.com**) has been writing about digital video since 1991. Tom Wolsky (**www.southcoasttv.com**) is a former producer for ABC News in New York and in London, and is the author of *Final Cut Pro 2 Editing Workshop*, coming soon from CMP Books.

Essential keyboard shortcuts

PRESS THIS	TO DO THIS
Logging and Capturing	
I, O, F2	Set a clip's in-point, set its out-point, and log it.
⌘-H	Batch capture.
shift-C	Capture now.
Playing Video	
J	Rewind (press repeatedly to increase speed).
L	Play forward (press repeatedly to increase speed).
K	Stop.
shift-\	Play from the in-point to the out-point.
Editing	
option-T or control-T	Apply default transition.
' (apostrophe)	Jump to the next edit in the timeline.
; (semicolon)	Jump to the previous edit in the timeline.
A	Select the arrow tool.
B	Select the razor-blade tool.
N	Temporarily toggle snap-to in the timeline.
⌘ while dragging	Slow the mouse for greater precision.
home or end key	Jump to the beginning or end of the timeline (or clip, in the Viewer window).
shift-page up, shift-page down	Scroll the timeline left or right.

The Mac does count

When it comes to accounting, Macs can match PCs anytime. By Bob Foley

Just as Macs are associated with home-movie making, music-authoring and desktop publishing, the PC is often thought of as a home- and office-accounting tool. But all Macs — from entry-level iMacs to the 867MHz Power Mac G4 — can be accounting powerhouses, if you so choose. A Mac can run your business just as ably as it can help you make an iMovie. It can help you stay on top of billing, determine how much coffee you need to order for your staff, and, most important of all, calculate, organize and administer your finances.

GEORGINA WATSON

Data creator
Accounting systems make data-entry highly automated, so that the only things a user need type are the description of the sale and the amount, excluding VAT.
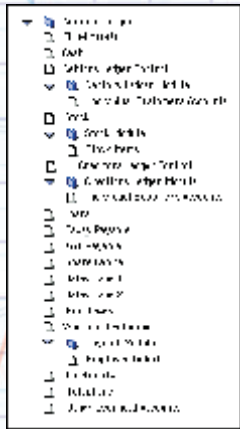
Accounting basics
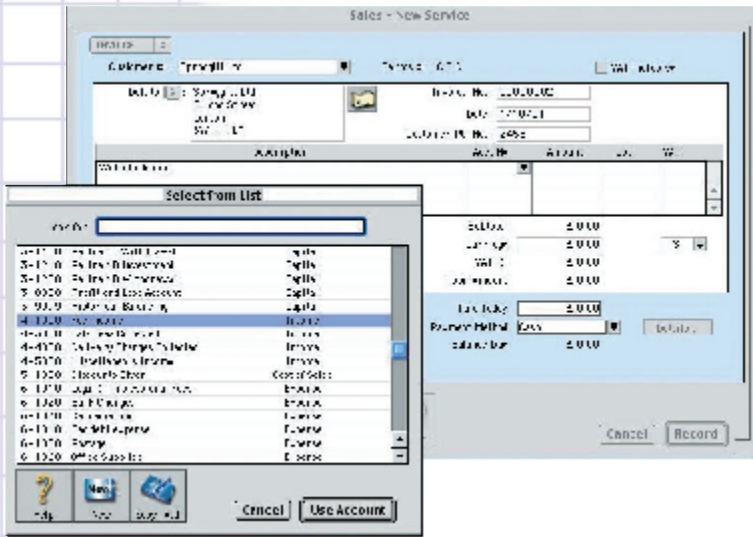If you're new to accounts, it might be helpful to think of accounts activities as a nested-folder system – similar to the way folders are arranged on a Mac.

There is now some excellent accounting software available for the Mac, and, with no problems concerning incompatibility of data with Wintel machines, maybe it's time to persuade your accountant to invest in a speedy Macintosh.

This feature is both for those looking to buy their first accounting software-package and those seeking a more powerful package.

At the low-end is Torsoft's Cashbook Manager and Hansa FirstOffice. Next up, for between £200 and £400, there's MYOB Accounting and Ritz 2000. At the start of the higher end of the market – at around £350 – are Hansa Office2 and Access FoundationsXP, although products in this group can cost several thousand pounds when adding all the optional modules available.

What's in an accounting system?

It's useful to think in terms of a folder system (see "Accounting basics"). Every package has at its heart the nominal ledger (or general ledger), that contains records of the business's assets (computers, desks, cash, etc), and liabilities (bank overdrafts, etc), as well as sales and expenses.

Because there's a large amount of data underlying some of the figures in nominal-ledger accounts, there are separate modules for some of them. For instance, your debtors' account may have a balance of £250,000 – made up of hundreds or thousands of amounts owed by individual customers.

To keep track of these requires a separate debtors ledger – or sales ledger – module. This allows you to record a mass of other useful information about customers, including address, phone number, contact names and terms of trade.

The same applies to your creditors: there will be a creditors ledger module – or purchases ledger – to keep track of suppliers, and what you owe them.

The above form the basics of any decent accounting system, but any number of modules – for dealing with stock, payroll, fixed assets and so on – can be bolted on. You may also want tools that help with job costing, or time allocation, and for any other aspect of running a business that can be represented in unitary and monetary terms.

Data entry in an accounting system is usually highly automated. For example in "Data creator" (above), the only things the user will actually type are the description of the sale and the amount, excluding VAT. All other information is either selected from drop-down menus, drawn from the database, or calculated automatically.

Entry level

Torsoft Cashbook Manager As its name suggests, Cashbook Manager (£34; Torsoft, 01752 895 100) is not a fully fledged accounting package. The basic product is similar to a personal-finance package such as Microsoft Money, or Intuit Quicken. It's simply a means of recording and analysing money that been spent or received. A module for sales and purchases can be added, that allows you to add customer contact-details, supplier details, and information concerning issued and received invoices. Unfortunately, you can't actually print-out an invoice to send to a customer. There's also a contact-management module. The modules cost £25.50 for the pair.

Torsoft has a number of standard "charts of accounts", tailored for specific businesses, such as hairdressing, gardening, electrical work, and so on. These career areas show that the product is aimed at the self-employed with small payrolls. This approach allows for transactions to be categorized in an appropriate way: a hairdresser will want a shampoo account, whereas a gardener may want a fertilizer account.

Being an entry-level product, Cashbook Manager's analysis and reporting facilities are limited – you can't, for example, produce a trial balance. You could export data to Excel and manipulate it that way, but what's the point? You may as well enter data straight into a set of Excel spreadsheets in the first instance.

Hansa FirstOffice This product (£95; Hansa, 0191 296 1500) is a pared-down version of Office2, which is covered later on. The basic version lacks functionality dealing with stock control, payroll, costing features, and multi-currency. Although not as full-featured as the more expensive MYOB, it is suitable for a company that already uses Office2, and so possesses the necessary knowledge in-house. Although affordable, FirstOffice is not the logical starting point for the average first-time buyer who would need to factor-in the cost of basic accounts training.

Mid-range

MYOB Accounting Plus This is a well-established and truly excellent package. MYOB (it stands for Mind Your Own Business) is by far the best choice for a first real accounting system for small companies, being able to handle accounts systems involving at least 10,000 transactions per year.

Everything in MYOB Accounting Plus (£295; MYOB UK, 01344 397 222) is made easy for the inexperienced user.
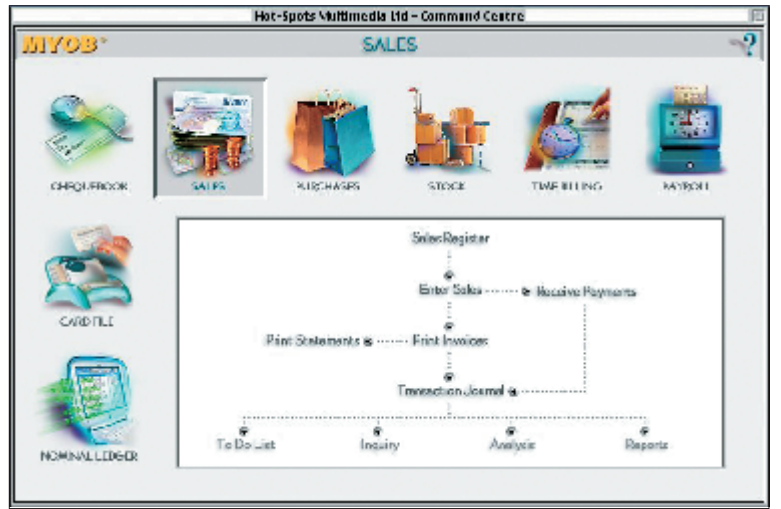
There are standard (but customizable) charts of accounts for a wide variety of businesses, and each aspect of the system has an Easy Setup Assistant – a sort of wizard – which asks the user all the questions it requires answers to, enabling it to properly configure the system.

Back to basics

MYOB's basic system (see "What's in the box") includes nominal, sales and purchase ledgers, plus a cashbook and basic stock-management module and – a great bonus for the price – a payroll module (see "What's in the box?"). For an extra £100, you get a time-billing module (useful for typical Mac service-based companies), multi-currency options, and a more-advanced stock-management module.

There is a boiled-down version of this product, called MYOB Accounting (£195, MYOB).This offers more basic stock-control features, but lacks costing and billing functionality. MYOB Accounting is something of a bridge product between the entry-level and mid-range packages.

Ritz 2000 This product sits somewhere between MYOB and the higher-end FoundationsXP and Office2 – even if, at £395 (Ritz Software, 01689 860 444) for the basic package, it's actually more expensive than these two titles.

Those new to accounting packages will like the fact it helps with initial set-up, although, unlike MYOB, its set-up screens are not as intuitive for the uninitiated.
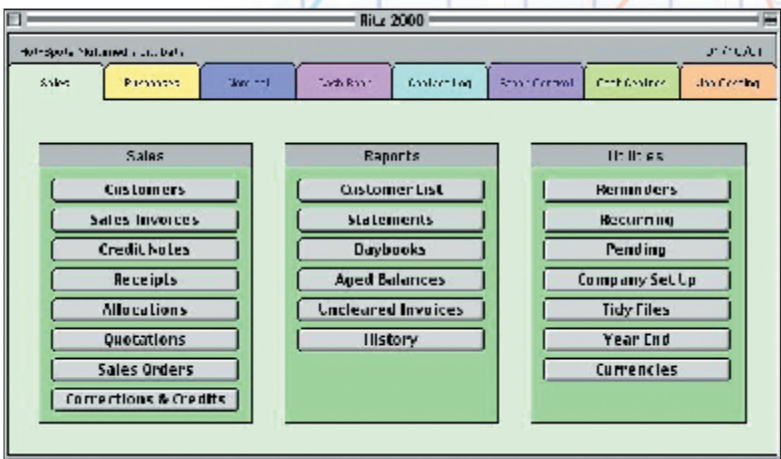
Ritz is well-illustrated with screenshots and example data, and its context-sensitive online help is perhaps the best of all the products under review. Its interface is also well designed (See "Plain and simple").

One annoying thing is you can have only one window open at a time, which limits its flexibility. For instance you could be working on a multi-line purchase invoice, and

What's in the box?
As well as the usual ledgers, MYOB's basic system includes a payroll module – great value for the price.

Plain and simple
Ritz 2000's interface may be plain, but is well-organised and so easy to follow.

Accounting software compared

PRODUCT	Torsoft Cashbook Manager	Hansa FirstOffice	MYOB Accounting	MYOB Accounting Plus	Ritz 2000	Access Foundations XP	Hansa Office2
URL	www.torsoft.co.uk	www.hansaworld.com	www.myob.co.uk	www.myob.co.uk	www.ritzaccounts.co.uk	www.access-accounts.com	www.hansaworld.com
Phone	01752 895100	0191 296 1500	01344 397 222	01344 397 222	01689 860 444	01206 322 575	0191 296 1500
Downloadable trial version	No, although the Web site says there is.	No	Yes	Yes	Yes	No	Yes
Price (ex VAT)	£34 for basic product plus £25.50 for two additional modules.	£95	£195	£295	£395	£375	£350
Concurrent users	Single	Single	Multi	Multi	Optional add-on	Multi	Multi
Platforms	OS 9, OS X, Windows	OS 9, OS X, Windows	OS 9, OS X, Windows	OS 9, OS X, Windows	OS 9, OS X, Windows	OS 9, OS X, Windows	OS 9, OS X, Windows
Export to common format(s)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
KEY MODULES AND FEATURES							
Cash book	Yes	Yes	Yes	Yes	Yes	Yes	Yes (part of other ledgers).
Nominal ledger	Rudimentary	Yes	Yes	Yes	Yes	Yes	Yes
Sales ledger	Rudimentary	Yes	Yes	Yes	Yes	Yes	Yes
Purchases ledger	Rudimentary	Yes	Yes	Yes	Yes	Yes	Yes
Stock control	No	No	Basic	Advanced	Yes	Yes	Yes
Payroll	No	No	Yes	Yes	No, but a separate Payroll module is available.	No, but a separate Payroll module is available.	No, but recommend dbsPay2.
Costing features, time billing	No	No	No	Yes	Yes	Yes	Yes
Contact management/CRM	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multi-currency	No	No	No	Yes	Add-in	Yes	Yes
Star Rating	★★★/6.5	★★★★/8.3	★★★★/8.8	★★★★/8.8	★★★★/7.2	★★★★/7.7	★★★★/8.3
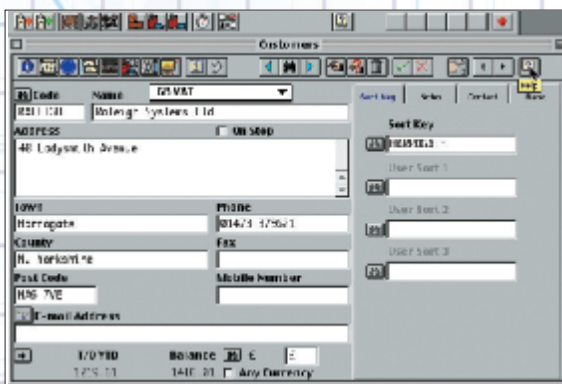
Fat help
Online help in FoundationsXP is poor, with a query relating to the above window triggering a page of waffle – which only made sense after much careful re-reading.

suddenly remember you need to enter a journal in the nominal ledger. In Ritz 2000, you will be unable to switch temporarily to the relevant part of the program and then switch back and carry on with your original task: you'll lose all posted data if you attempt this.

Another drawback is the issue of scalability: Ritz 2000 offers a number of add-on modules, and a separate payroll package, but that's as far as it goes. Once the basic Ritz 2000 package is outgrown, you'll have to switch to the Access or Hansa products. If you're going to spend about £400, why not start-off with FoundationsXP or Office2?

High end

To get the most from the more complex packages, you'll need someone with specialist accounting knowledge – otherwise you're well advised to seek advice or training from an accountant or a suitably qualified reseller.

Access FoundationsXP Access Accounts is nothing to with either the credit-card company, or the Microsoft database.

FoundationsXP (£350; Access Accounts, 01206 322 575) is a stepping stone to Access's products for medium and large companies – Access Horizons and Access Dimensions respectively.

There are some lovely features in this package, one of which is the ability to select data from on-screen reports and paste it into an Excel spreadsheet – with no need for comma-separated file exports or the like, as required in most other packages.

Advanced features

Besides the standard ledgers and modules, FoundationsXP offers more sophisticated features for stock management, sales and purchase-order processing, costing and credit control than the cheaper packages. It also appears to be better geared-up to the euro than most other packages on test. Practically every aspect of the system can be configured to behave exactly as you like, and this is what you would want when you are ready to step up from a smaller computerized system such as MYOB, because by then you will have a lot of data in a semi-customized form (your system of coding and numbering, your tailored chart of accounts, and so on).

One drawback with FoundationsXP is that the documentation and online help are quite atrocious. For instance, I brought up a window entitled New Analysis (see "Fat help") whose fields to complete included code, description, sort key, VAT, currency, debit, and credit. I clicked the "help" question mark expecting to see, at the very least, an example of this window completed with sample data, followed by a more-detailed description showing each field, and the type of data to be inserted and where it can be found.

Window boost
One feature in Hansa Office2 that's a real boon is the ability to have as many windows open as you like, adding much to its flexibility.

Instead I got a page of waffle, which seemed to bear no relation to the matter in hand. Only after a careful read did it begin to make any sense. High-end or not, users always want quick results – not a plethora of options.

The manual is worse still. Even something as simple as entering a payment to a supplier requires the user to wade through ten pages of turgid instructions. By contrast, in the Hansa Office2 documentation, there's a heading simply entitled Entering a payment, followed by field-by-field instructions: click on this, hit that keyboard shortcut, enter this data, and so on. It's simple, clear, and comprehensive.

Hansa Office2 This is from a well-established company based in Denmark. It produces versions of its software for many countries in Europe. Office2 (£350; Hansa, 0191 296 1500) is a stepping stone to Hansa's products for medium-to large-companies, called Hansa Financials.

Office2 is a nice package, offering all the more sophisticated features and data-manipulation ability of Access, including time billing and costing features, contact-management features, and multi-currency capability. Moreover, it's remarkably swift, making the other packages on review feel sluggish by comparison – particularly Access FoundationsXP.

Also, compared with FoundationsXP, there's a good deal less mouse-work and menu selection work necessary to get data on screen in the required form and order. This will be particularly appealing to data-entry staff, whose work is made that much easier by keyboard-friendly interfaces.

One feature I particularly liked was the uniform shortcut-key, Paste Special (⌘+Enter). This brings up whatever list of codes or other data is appropriate, at almost every data-entry field throughout the system. Also extremely useful is the ability to have as many windows open as you like (see "Window boost"). Other packages – notably Ritz 2000 – tend not to allow you to make changes in one part of the system while you are working in another.

Because the system is designed to be used in so many different countries, Office2 can be eccentric. For instance, to make the system automatically calculate VAT on an invoice, you'd expect to enter the current rate (17.5 per cent) as a default. Instead, you have to enter the result of the calculation 17.5 divided by 117.5 (which comes to 14.8936).

This is clearly explained in the manual, and you only have to do the calculation and enter the result once – but you'd have thought the software could do this bit of maths for itself.

Another criticism of Hansa Office2 is that its documentation is unavailable as part of a context-sensitive online help system.

Macworld buying advice

By necessity, we've only scratched the surface of available accounting software – particularly with regard to the weightier packages. The titles reviewed, though, are a representative cross-section of what's out there.

Until someone produces a better sub-£100 entry-level accounting product for the UK Mac market, you're better-off using a good spreadsheet package, such as Excel. You may even find that your favourite database has built-in accounting templates.

Of the mid-range products – ideal for small businesses – MYOB is the clear first choice. Go for MYOB Accounting Plus if time-billing or stock management are important in your business.

Larger businesses require more accounting power and configurability. Both Access FoundationsXP and Hansa Office2 are high-end products, and are up to the job – but Hansa Office2 is the winner, for its speed and ease of use. **MW**
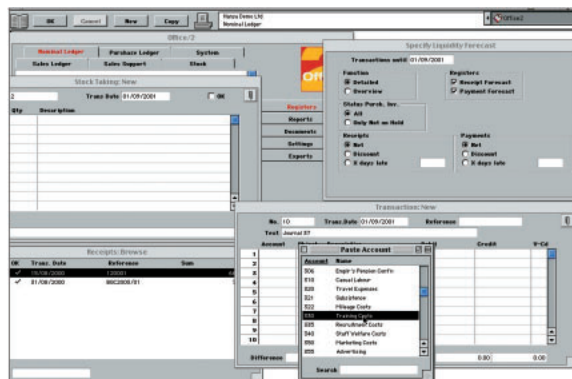
Flash hoardings

Add animation to Web sites with Dreamweaver, Flash and Shockwave. By David McFarland

With Cascading Style Sheets Dreamweaver Behaviors, and Images, you can bring Web pages and banner adverts to life with interactivity and animation. But as you may have noticed, more and more Web pages these days blink, sing, and dance with sound, video, and advanced animation.

You can create these effects too, but they require outside help from other programs such as Flash, Director, or Java; all of them let you create complex multimedia presentations.

Dreamweaver provides powerful tools for adding these external media files and embedding them within your Web pages.

Four warnings, however. First, while all of the technologies discussed in this article let you expand your Web pages into new and exciting territory, they also require external applications (not just a Web browser).

Missing audience

These programs, usually called plug-ins, are controversial in the Web-development community, mainly because they limit your audience. Not all Web site users have the necessary plug-ins installed on their computers. Those guests must choose from three equally unpalatable options:

Go to a different Web site to download the plug-in; skip the multimedia show (if there's a second, plug-in-free version of the site); or skip the Web site entirely. All media types mentioned here require a plug-in of some kind.

Second, it's worth noting that these effects can bulk up your Web page considerably, making it slower to load – and making it still more likely that some of your visitors (especially those using dial-up modems) won't bother sticking around.

Third, these flashy multimedia effects are easy to overuse. Blink and flash too much, and you'll find your audience beating a hasty retreat for the cyber-exits.

Finally, creating external movies, animations, or applications is an art – and a book or two – unto itself. This is a guide to inserting such add-on goodies into your Web page; it assumes that a cheerful programmer near you has already created them.

Multimedia move

External multimedia files like this Flash movie can add a dimension of sound, animation, and interactivity that brings new life to a site, and makes possible a complexity that's difficult to emulate using HTML alone. In this case (at www.safetreekids.net/hidden_dangers/index.html), clicking the man on the pole adjusts your score and lets you play for bonus points.

Flash is quickly becoming the standard for Web animation, and with good reason: Macromedia's Flash technology produces high-quality, animated images – known as Flash movies – at a relatively small file size. Its drawings and animations are vector graphics; they use mathematical formulae to describe objects on the screen. By contrast, bitmap technology such as GIF and JPEG graphics include data for every pixel of an image, gobbling up precious bytes and adding download time. Flash's vector graphics, on the other hand, save file size with their compact mathematical expressions.

Furthermore, Flash can also handle MP3

Control strip
The Parameters button opens a dialog box that offers additional technical controls (see the Flash manual).

audio and advanced-programming features, providing an added dimension of sound and interactivity that can make a plain HTML page look dull by comparison. For example, advanced Flash gurus can build automatic score tracking into an online game, or add a cannon-firing animation each time the player clicks the mouse. While Dynamic HTML can do some of these things, Flash movies are easier to create and less likely to contain programming errors. An intriguing advantage of Flash movies is that they look and work exactly the same on every browser, whether on Windows or Mac. Don't try that with HTML.

Trade off
Of course, all of this power comes at a price. Although Dreamweaver has some limited Flash-creation abilities, such as Flash buttons, you need another program – such as Macromedia Flash or Adobe Live Motion – to produce full-fledged movies. These programs aren't difficult to learn, but they're more programs to buy and more technologies to get under your belt.

In addition, your visitors can't play Flash movies without the Flash Player plug-in. If they don't have it, they'll have to download and install it – a sure spontaneity-killer. Fortunately, chances are your visitors already have it – all major browsers (even Opera) now come with

the Flash plug-in installed. In fact, Macromedia says that – insert pinch of salt here – over 90 per cent of Web browsers in use now have some version of the player (only 55 per cent have the latest version of Flash).

To insert a Flash movie into a Web page, click where you want to insert the movie; choose Insert-Media-Flash (or click the Flash button on the Objects panel). Either way, a Select File dialog box appears; navigate to the Flash movie file (look for a .swf extension) and double-click it.

Dreamweaver automatically determines the width and height of the movie and generates the appropriate HTML to embed it into the page. The movie appears as a grey rectangle with the Flash logo in the centre; you can adjust its settings as described on the next page.

To preview Flash files directly in Dreamweaver, just select the movie and then click the Play button on the Property inspector. To stop the movie, click the same button, which has become a Stop button.

If your page has lots of Flash movies – numerous animated buttons, perhaps – you can play all of them at once by pressing control-shift-option-P. Sit back and watch the show. To stop all running movies, press control-Shift-Option-X. (You can also preview Shockwave movies in Dreamweaver. And no wonder: Macromedia makes Shockwave, too.)

You'll rarely have to change the default properties created by Dreamweaver. But if you ever want to change the margin of space around a movie, restore it to original size after resizing it, or swap in a different movie, the

Property inspector is the place to do it.

As with images and navigation buttons, you can use JavaScript to control Flash movies. For example, Dreamweaver's built-in Control Shockwave or Flash behaviour lets you start, stop, or jump to a specific frame in a Flash movie.

However, if you plan to use JavaScript with your Flash movie, you need to give the Flash element a name. To do that, type the name you wish to use in the Name field – the box directly below "Flash Text" in the Property inspector. JavaScript uses this name to identify the movie in its code.

The File field specifies the path to the Flash movie file on your hard drive. To select a different file, type a new path into the File field, or click the folder icon to access your site folder's contents.

Although dragging to enlarge a GIF or JPEG image can turn it into a pixelated mess, you can usually resize Flash movies without problems, since their vector-based images are based on mathematical formulas that scale well. (The exception is when you've included bitmap images, such as GIFs or JPEGs, in your Flash movie. Then, as when resizing an image in a Web page, you'll see distortion and pixelation in the movie.)

To resize a movie, do one of the following:
■ Select the movie in the document window; drag one of the three resizing handles that appear at the edges of the movie. To avoid changing the movie's proportions in the process, press Shift as you drag the lower-right corner handle.
■ Select the movie in the document window; type new width and height values into the W and H boxes in the Property inspector. You can also use percentage values; this way, Web browsers scale your movie to fit the window.

If you make a complete mess of your page by resizing the movie beyond recognition, just click Reset Size in the Property inspector.

Relative values
You can align Flash movies relative to the paragraphs around them, just as you do with images. For example, choosing Right from the Align menu positions the movie at the right of the screen and wraps text around its left side. (If the movie is inside a layout cell, Align Right moves it all the way to the right of the cell.)

To set a background colour for a Flash movie, use the Bg Color box in the Property inspector. This colour overrides any background colour set in the movie itself; it fills the space where the movie appears when the page first loads (and the movie hasn't).

The ID field at the left of the Property inspector holds the movie's ActiveX ID parameter. The Flash Player – in Internet Explorer for Windows – is actually an Active X control itself. If you use other ActiveX controls on a page, you can use this ID to pass information between them. This very technical property is optional; furthermore, since ActiveX controls work on only Windows and in only Internet Explorer, you may never need to use it.

Flash-movie margins are especially useful if you've wrapped text around the movie on the page; they determine how much buffer space falls between the movie and the text.

Scalability

Show All
No Border
Exact Fit

A Flash movie's Scale property specifies how a movie should be scaled when its Width and Height properties are set differently than the original movie. If you've resized a movie, press F12 to see how it looks in a Web browser, then, if necessary, choose a different setting from the Scale pop-up menu in the Property inspector.

To add space above and below a selected movie, type a number of pixels into the V space field in the Property inspector; press enter to see the results of your change.

To add space to the left and right, type a pixel measurement in the H space field. Ten or 20 pixels usually provides an attractive amount of space. Unfortunately, you can't specify independent values for each of the four margins – only top/bottom and side/side.

Choppy sees
If your Flash movie's heavy data requirements overwhelm a visitor's computer, it may run slowly and appear choppy, especially if the animation is action-packed and complex. Until the day when everyone has a 800MHz computer with 2GB of RAM, you may need to adjust the quality settings of your Flash movies to help them look better on all computers, from the sluggish to the speedy.

By default, Dreamweaver sets the quality to High, but you can choose any of the following four settings from the Quality menu in the Property inspector:
■ **High** provides the greatest quality, but the movie may run slowly on older computers.
■ **Low** looks terrible. This setting sacrifices quality by eliminating all anti-aliasing (edge smoothing) in the movie, leaving harsh jaggy lines on the edges of every image. Movies set to Low quality look bad on all computers; to accommodate both the fast and the slow, use Auto High or Auto Low.
■ **Auto Low** forces the movie to start in Low quality mode, but to switch automatically to High if the user's computer is fast enough.
■ **Auto High** makes the movie switch to low-quality mode only if the user's computer

Overcoming the limits of links in Flash

When you create Flash movies in Macromedia Flash or Adobe LiveMotion, you can embed links in the movie itself.

You can create navigation bars, for instance, or animated push-buttons that open Web pages.

But, links in a Flash movie add a great deal of complexity to your site; when you link from a Flash movie to a Web page, the link is stored in the movie itself, not in the Web page that contains the movie. So, if the Flash file isn't in the same directory (folder) as the Web page containing it, a browser may get confused: Should it follow a path relative to the Web page or relative to the Flash file? In fact, different browsers handle this differently.

You could avoid the problem by simply storing the Flash movie in the same folder as the Web page. But doing so can be limiting; for example, you won't be able to use a single animated-Flash navigation bar on many different pages of your site, filed in different folders.

Fortunately, you can use a little trick to make your document-relative links work no matter where you file your Flash movies. First, when creating a Flash movie, make sure that any document-relative links in it are spelled out relative to the Flash movie's folder location. For instance, if you save your movie in a folder called flash, and you wish it to link to a page called welcome.html located one level up from the flash folder, the correct link, relative to the movie, would be ../welcome.html.
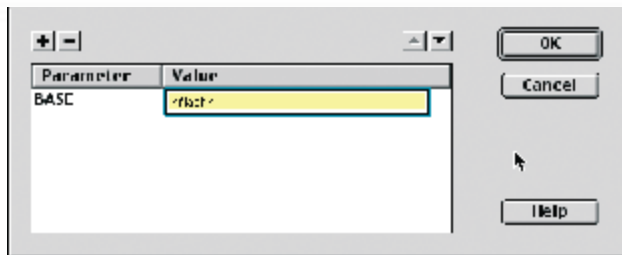
Next, after you insert the Flash file into your Web page, click Parameters on the Property inspector. The Parameters window opens, as shown here; now you can add additional properties for plug-in media. In this case, you'll use the BASE property to instruct the Flash Player to use a different URL as the starting

location for any links in the Flash movie. In other words, instead of following the link in the movie, the player first appends the path specified by the BASE property's value.

Here's an example: Suppose the Flash movie mentioned above – the one that links to the welcome.html page – is on a page in the same folder as welcome.html. The document-relative path from that page to the welcome page is welcome.html – but ../welcome.html relative to the Flash movie. Since the link is in the Flash movie, the path relative to it should work. But some browsers try to follow the path relative to the Web page, leading to broken links.
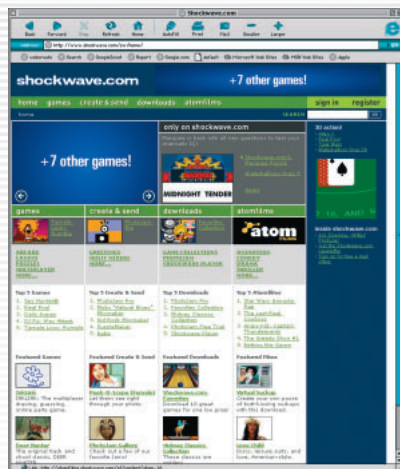
Using the BASE parameter, you can specify that all links in the movie should be followed relative to the movie. Here's one instance where a root-relative path comes in handy.

Since document-relative links in Flash movies can confuse browsers, a root-relative path is the only way to indicate the exact location of a file within a site. In this case, suppose the "flash" folder is stored in the site's root folder; a root-relative path to the folder with the Flash movie would be /flash/.

The <object> and <embed> tags

If you choose View-Code after inserting a Flash movie, you may be surprised by the amount of HTML Dreamweaver deposits in your page. You may also encounter some HTML tags you've never heard of, including <object>, <embed>, and <param>. These tags provide browsers with the information they need to launch the Flash Player and play a Flash movie. These tags are also used for other embedded media (Shockwave, for

example). The <object> and <embed> tags do the same thing in different browsers. Netscape uses <embed> to insert movies and other plug-in media, while Internet Explorer uses the <object> tag to insert ActiveX controls. For maximum browser compatibility, Dreamweaver adds both tags; browsers ignore HTML tags that they don't understand, so this method doesn't cause problems.

Shocking behaviour

This Shockwave game offers animation and interactivity just like a Flash movie. However, for games that require precise timing and action, Shockwave is usually a better choice. Its advanced 3D features and built-in physics principles – like gravity and collision detection – make it perfect for advanced gaming applications. To sample this technology, go to www.shockwave.com. There you'll find a mixture of Flash and Shockwave movies.

There's more on importing animation in Dreamweaver 4: The Missing Manual *by David Sawyer McFarland (Pogue Press/O'Reilly; ISBN: 0-596-00081-2). This article is the second of a series of* Macworld *extracts from the book, which costs £17.50 from all good booksellers.*

requires it. In this way, you can deliver a high-quality image to most users, while still letting those with slow computers view the movie. This is the best choice if you want to provide a high-quality image, but still make your movie accessible to those with older computers.

When you resize a Flash movie, changing its original proportions, your visitors' Web browsers will scale or distort the movie to fit the newly specified dimensions. Scaling becomes an issue particularly when, for example, you give a Flash movie relative dimensions (setting it to, say, 90 per cent of the browser window's width), so that it grows or shrinks as your visitor's browser window grows or shrinks.

Movie plug
The Scale property lets you determine how the Flash Player plug-in scales your movie.

For example, in Scalability, the top movie's original size is 200-pixels wide and 50-pixels tall. But if you resize the movie so that it's 300-x-50-pixels, one of three things may happen, depending on the choice of Scale setting you make:

■ **Show All** This setting, the default, maintains the original aspect ratio of the movie (second from top in Scalability). In other words, although the overall size of the movie may go up or down, the movie's width-to-height proportion remains the same. This keeps the movie from distorting, but it may also cause borders to appear on the top, bottom, or either side of the movie. (To hide the borders, match the movie's background colour to the colour on the page.)

■ **No Border** This setting resizes the movie according to your specifications and maintains its aspect ratio, but may also crop the sides of

the movie. Notice how the top and bottom of "Cosmopolitan farmer" (see page 155) are chopped off (third from top in Scalability).

■ **Exact Fit** This option may stretch your movie's picture either horizontally or vertically. In Scalability (bottom), "Cosmopolitan farmer" is stretched wider.

As the Internet-ready form of movies created with Macromedia's Director, Shockwave is an older brother to Flash. Director has a longer history as a tool for developing complex interactive presentations. It began life as a program for creating CD-ROMs; but when the Web exploded onto the scene, Director quickly morphed into a Web-authoring tool. Because of its CD background, Shockwave offers far more complex programming possibilities; it's ideal for detailed interactive presentations.

User base
Like Flash, Shockwave requires a plug-in; but unlike the Flash plug-in, this one doesn't generally come preinstalled with Web browsers. If you include Shockwave animations in your Web site, many of your visitors will need to download the Shockwave player – a 3.5MB download.

That annoying requirement is a good argument against using Shockwave for general-audience Web sites. Some of your visitors – especially the ones that don't have cable modems or ADSL – may not put in the time and effort required to enable their browsers to view your masterpiece.

But if you just can't do without Shockwave, you insert a Shockwave movie into a Web page just as you would any multimedia format. Click where you want to insert the movie; then choose Insert-Media-Shockwave (or click the Shockwave button on the Objects panel). Either way, a Select File dialog box appears; find and double-click the Shockwave movie file (look for the .dcr extension). The Shockwave movie appears as a grey rectangle with the Shockwave logo in the centre. But Dreamweaver can't automatically calculate the dimensions of Shockwave movies, so you need to type the width and height of the movie in the W and H fields of the Property inspector. Use the same dimensions you specified when creating the file in Director.

You can preview Shockwave files directly in Dreamweaver by selecting the movie and clicking Play on the Property inspector. To stop the movie, click the same button (which is now a Stop button).

You resize a Shockwave movie just as a Flash movie.

The only Shockwave movie property you have to set by hand is the width and height of the movie. Most of the time, you won't need to bother changing the default properties; the Property inspector does, however, let you change the movie's name (a requirement for using JavaScript to control its playback), substitute a different movie, choose the movie's alignment relative to the text around it, specify a background colour, select an ActiveX ID, or specify top/bottom or side/side margins. All of these options work just as they do for Flash movies. **MW**
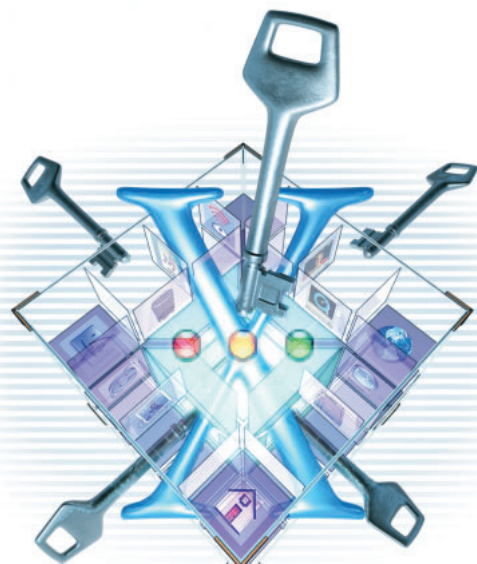
Secret service

OS X can open Macs up to attack. By Shelly Brisbin

Maybe you don't work on top-secret documents, run a Web site, or write clandestine love letters on your Mac OS X machine. Still, if it's on a network or continuously logged on to the Internet, you should be concerned about security. Always-on broadband connections leave your Mac vulnerable to attack. It's up to you to see that you don't become a victim of criminals – or of plain old mistakes.

What can happen if you don't take our security recommendations to heart? Determined intruders can not only read and destroy your data, but also damage your operating system by changing settings or deleting or adding files. They can even steal your identity – which they can use in gaining access to other computers, sometimes leaving behind harmful programs that will cause problems later.

Although the flexibility of OS X's Unix foundation means that miscreants can more easily mess with your Mac, Apple has done a lot to protect your system – and you can do much more, short of pulling the network plug altogether. Here's how.

Mac OS X provides two kinds of accounts: administrator accounts and user accounts. An administrator can change settings, install software, and open accounts for other users. Administrators also have access to much of the Mac's hidden Unix-folder structure.

Users, on the other hand, can see and use only folders within their Home directory or other users' Public folders. They can run applications, but they can't modify system preferences. Administrators can safely give user accounts limited access to an OS X machine.

Account manager

If, like most Macs, yours has only one primary user, you can protect yourself by not creating extra accounts, especially administrator accounts. Anyone who gets hold of the administrative-account password can change system preferences or install applications; you may want to log-in routinely as a user, entering the administrative password only when you need to make a change.

Most attacks on Unix computers happen when an unauthorized person gains root access to the machine. The Unix root account is all-powerful; with it, someone can completely control the Mac from a remote location, modify or delete important files, enable network services, and destroy system components. Apple has disabled the root account in Mac OS X, and although you can activate it, there's no reason to, even if you need access to Unix applications.

By using the sudo command instead, experienced users can act as root without fear of compromising the Mac's security or doing any serious damage (see Mac OS X Secrets, October 2001). And with root access unavailable, intruders have one less way to enter your system.

An easy way to protect your Mac is to give outside users only minimal access to it. OS X includes support for file sharing; remote access via the command line using SSH (Secure Shell); Web sharing; and FTP (File Transfer Protocol). You can also add third-party network

Build that wall
BrickHouse lets you set your Mac's access controls individually for network services such as POP mail and Timbuktu. You can even grant access to only specific IP addresses, so only recognized computers can connect.

applications such as Timbuktu, and access to FileMaker Pro databases. But don't enable services that you don't need.

When you install OS X, most networking services that allow others to connect to your Mac are turned off (though your Mac will be ready for you to log on to other networks if you used the Setup Assistant during installation).

Find out which incoming network services are deactivated. Open the Sharing application within System Preferences. Here you'll find the doorways to most methods of network access to your Mac; activating any one of them provides a means for intruders to access your computer. Use only those that you know you need.

Share options

File sharing is safer than other networking applications. You can grant access to only the directories you want to share, keeping file-sharing users out of your machine's sensitive system directories. In addition, file-sharing passwords are encrypted, so they're less likely to be intercepted by a network sniffer – a program or device that captures network data as it travels to its destination.

You can add further protections by setting privileges for individual folders. To do this, select the folder in the Finder, choose Show Info from the File menu, and then select Privileges. Provide the fewest privileges you can get along with. For example, if you don't need to share your files, you might deny access to the Public folder in your Home directory.

The riskiest options in the security spectrum are Remote Login and FTP access. Remote Login lets a user connect to your Mac remotely using a terminal emulator (see Mac OS X Secrets, September 2001). Though Mac OS 10.0.1 and later replace the very insecure Telnet with the safer SSH, you should probably leave Remote Login turned off. If you must enable it, be sure you've updated to the latest version of Mac OS X.

Mac OS X 10.1's enhanced support for file sharing between Macs and PCs makes using FTP unnecessary. It's also risky, because FTP passwords are not encrypted as they traverse a network. If you must allow FTP access,

protect the administrator password by giving users with administrator accounts different passwords.

Mac OS X Web sharing is actually a version of Apache Web server (found on many Unix systems). By activating Web sharing (in the Sharing panel), you launch Apache. The Sites folder in the directory of each user on your Mac then becomes publicly accessible – along with any files that are contained within that folder.

Because it doesn't expose the rest of your Mac, Web sharing is fairly secure, and there are no passwords or command-line entry methods to protect. The key to secure Web sharing is placing only files meant to be shared into Sites folders. If a user doesn't need to share files via the Web, delete that user's Sites folder or use the Privileges settings to make the folder unavailable.

If you plan to allow network access to your Mac, you should consider taking some additional precautions. Software firewalls can track and repel unwanted visitors, and you can set them to allow access only from approved IP addresses or to block port scans, pinging, and other tactics hackers use to size up your Mac's vulnerability.

You can also use firewall software to block some or all of the communications channels, called ports, that network services such as Web sharing use to connect to your Mac. If you blocked port 80 using a firewall, for example, a visitor wouldn't be able to get to your Web site.
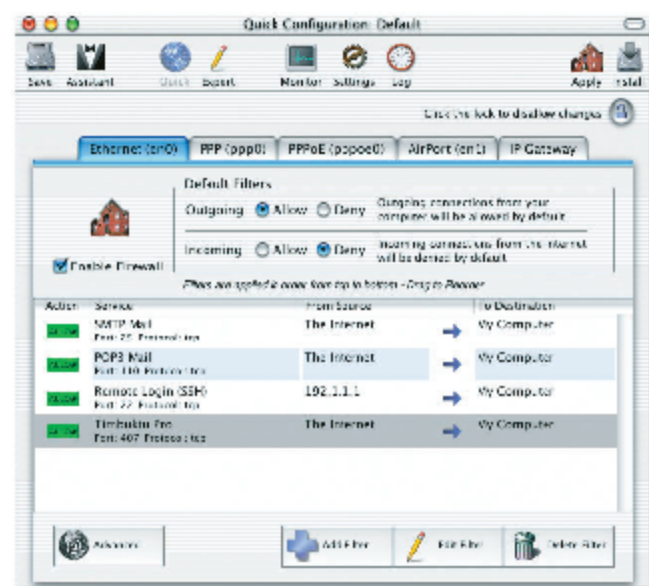
Some tools, including Brian Hill's shareware BrickHouse ($25; **http://personalpages.tds.net/~brian_hill**) and Pliris's Firewall X ($12; **www.pliris-soft.com**), provide a graphical interface for ipfw, OS X's built-in Unix-based firewall. You can also assess your security risk by using Open Door Networks' security-auditing application Who's There? Firewall Advisor ($49; **www.opendoor.com**).

Despite the security challenges posed by its Unix foundation, Mac OS X has built-in protection that should help you in your efforts to keep your Mac safe. With a combination of common sense and judicious limits on incoming Internet access, you can minimize your Mac's exposure to potential danger and lessen the likelihood of security breaches. **MW**

'Determined intruders can not only read and destroy your data, but also steal your identity'

Check out this month's CD for software mentioned in OS X Secrets.

Mac OS X tips and tricks

Don't panic

Should OS X crash with a kernel panic at startup, Apple suggests that you try these remedies: Make sure that your Mac has the latest firmware. Remove all peripheral devices except for your Mac's keyboard and mouse. If the Mac no longer panics once these devices are gone, add one at a time until the Mac malfunctions. Once you've isolated the funky device, check for OS X-compatible drivers.

Remove any internal third-party upgrades such as RAM, accelerators, and PCI cards. Again, add them back in one at a time. If a RAM upgrade seems to be causing the problem, contact its manufacturer to see if it's up to Apple's specifications.

Command console

You can access OS X's Console from the Log In screen. To do so, select Log Out from OS X's Apple menu and when the Log In screen appears, click Other.

In the Name and Password window, type ">console" (without the quotes) in the Name field. Don't bother to enter a password, and press Log In. In a flash, you'll see the command-line console, ready to do your bidding.

Screen-grab shortcut

The shortcut keys for taking screen grabs are back in 10.1 (they went missing in 10.0.x) When you press ⌘-shift-4 you can take a picture of a selection. Or ⌘-shift-3 for the whole window. The pictures end up on your desktop.

Sherlock clipboard clash

Apple reports that if you have a graphic file in OS X's clipboard and open Sherlock (or make it the active application), you may receive an error that reads: "An unexpected error occurred. If you continue to encounter problems, quit and start again."

The solution to this problem is to place something other than a graphic file in the clipboard – select a block of text and copy it, for example. Annoying, but necessary for now.

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Colour difference

Converting to CMYK from RGB to edit pictures for print can be a mistake. By Bruce Fraser

When you send digital images to a printing press, the colour files must be in CMYK format – but that doesn't necessarily mean the images should start out that way. Editing files in RGB mode can have advantages, while some editing tasks are best done in CMYK, so it's wise to be comfortable with both modes.

If you're lucky enough to work in a closed-loop, all-CMYK workflow, where you know the printing conditions at the time you scan your images, stick to that format. If you start out with CMYK scans, converting them to RGB for editing purposes is a mistake – you'll lose more than you'll gain. However, the circumstances that call for an all-CMYK workflow – always printing to the same press, with the same inks, on the same paper stock, with no other use for the image – are becoming rarer.

CMYK craziness

It's crazy to work in CMYK if you don't have a clear idea of your job's printing conditions, because CMYK separations that work well on a sheet-fed press can produce mud on a web press, and worse than mud on newsprint. Unless you know which inks and paper the printer will use for your job (and can therefore adjust for them), your image may wind up looking quite different from what you envisioned.

Designers often put images to multiple uses: they may need an RGB version for the Web, a CMYK one for print, and even multiple print versions. But turning a CMYK scan into an RGB file typically produces poor results on the Web – monitors can display many colours that CMYK print can't reproduce, and CMYK print contains a few colours that monitors can't reproduce.

The other extreme – working entirely in RGB and then putting your RGB image through an automated conversion process before printing – won't give you good results either. Great colour takes intelligent human intervention. The RGB-to-CMYK conversion that can do justice to both a pastel early-morning landscape and a saturated tabletop product shot simply doesn't exist and probably never will.
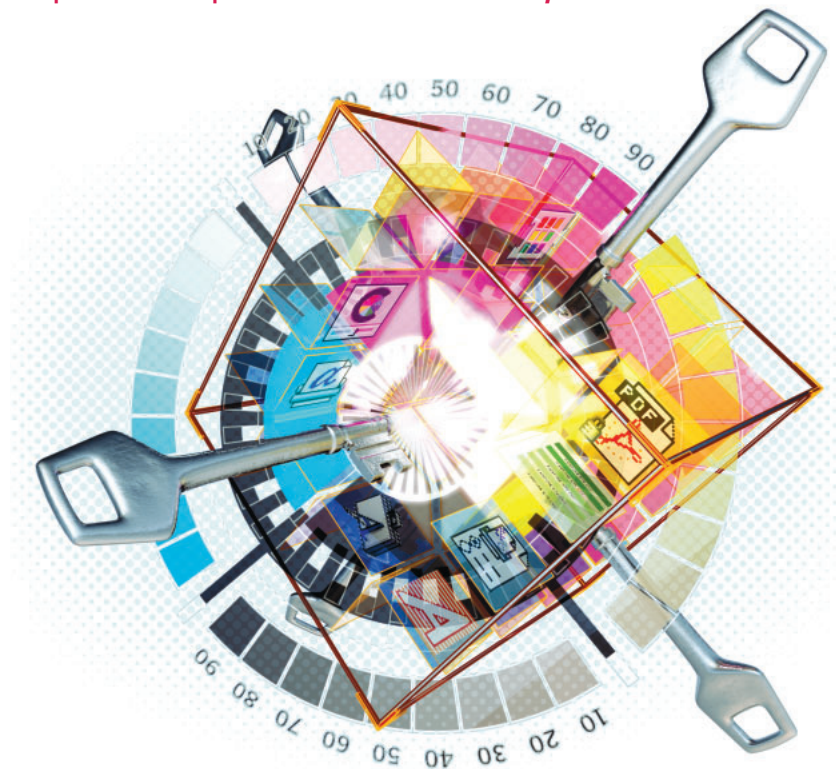
It's a great deal easier to correct colour casts in RGB than in CMYK. One of the wonderful properties of Adobe Photoshop's RGB working spaces is that equal values of red, green, and blue always produce a neutral grey. You can fix the vast majority of colour problems by finding an image element that you know should be neutral and then using the Curves feature to make it neutral. When you do so, the rest of the colours simply fall into place. It's much more difficult to tweak four curves to produce the unequal amounts of cyan, magenta, yellow, and black that result in a neutral colour.

Compositing and image manipulation are also easier in RGB. In CMYK, many Photoshop filters, including Lens Flare, Lighting Effects, and all the Artistic and Texture filters, don't work at all. Others, such as Emboss, produce unpredictable results. In RGB mode, you can avoid violating ink limits.

CMYK colour tweaks

A colour's detail is always carried by its opposite colour. In CMYK, I gave the green foliage and blue water in the original photo (far left) some snap (middle) by using Photoshop's Curves tool (far right) to increase the contrast in the magenta and yellow channels, respectively.
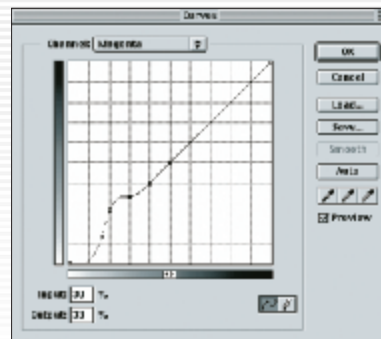
'At best, overinking will cause images to look muddy. At worst, it causes the paper to disintegrate, making a mess on a sheet-fed press and creating a life-threatening situation on a web press.'

No press can handle 100 per cent of all four inks. At best, overinking will cause images to look muddy. At worst, it causes the paper to disintegrate, making a mess on a sheet-fed press and creating a life-threatening situation on a web press if the paper breaks! Most presses work best when they reproduce the darkest tones using somewhere between 240 per cent (for newsprint) and about 340 per cent (for high-quality sheet-fed printing) total ink. When you work in RGB, your CMYK conversion settings determine your total ink limit. But there's no ink-limit safeguard in CMYK.

Probably the best reason to make as many edits as possible in RGB before converting an image to CMYK is that when you convert the image, it loses about half a bit of potentially valuable data. These losses aren't obvious at first, but the more you edit the image, the likelier you are to see posterization or colour banding.

RGB editing
To enjoy the best of both the RGB and CMYK, do most of your editing in RGB, but check your work as a CMYK simulation (use the Proof Colors tool in Photoshop 6, and CMYK Preview in older versions). An image on a monitor will never exactly match an image on paper, but it can come very close – probably as close as traditional proofs. Photoshop's CMYK previews will show you the more muted colour of CMYK.

Some types of editing you can do in only CMYK, and other types are easier in CMYK than in RGB. The black plate in CMYK has a major effect on the overall image, and some powerful techniques rely on manipulating the black channel, which isn't possible in RGB.

For example, I often use Photoshop's Channel Mixer tool to take black out of some flesh tones: I set the output channel to black, subtract some magenta and a bit more yellow, and then increase the black value to slightly more than 100 per cent to preserve the tonal values (a typical setting might be Magenta –4, Yellow –12, and Black +108).

Another classic black-plate trick can improve head shots, where you want to sharpen hair, eyes, and eyelashes without emphasizing skin texture. Sharpening only the black channel while leaving the cyan, magenta, and yellow channels makes the hair and eyes snap without oversharpening the skin or lips.

In CMYK, making subtle adjustments using the Hue/Saturation tool is much easier than it is in RGB.

CMYK also makes it easier to control detail in red, green, and blue objects by manipulating the opposite colour: in a green object, the magenta plate holds most of the detail; in a red object, it's the cyan plate; and in a blue object, the yellow plate. (The same principle applies in RGB images, but it works instead for cyan, magenta, and yellow objects, which seem to be a lot less common than red and green ones.) So to increase detail in green foliage, you increase the contrast on the magenta plate. I usually use the Curves tool to do this – the steeper the curve, the greater the contrast. To get the same results in RGB, you'd have to adjust both the red and blue curves, and that takes more work than adjusting a single curve.

Flat images
When converting an image to CMYK, Photoshop asks if you want to flatten it. You do. Layer blending that works beautifully in RGB may look very different in CMYK.

It's always a good idea to save and archive the edited, layered RGB file and then convert a duplicate to CMYK. If a client suddenly decides that an image prepared for a newspaper ad would look great in an annual report, you'll have a much easier time getting a good sheet-fed CMYK separation from the edited RGB file than you would from the newsprint separations. Ditto if the ad runs in magazines that use different inks from UK publications.

If you handle most of your editing in RGB, you'll find that fine-tuning is all that's needed after converting an image to CMYK. And it's this fine-tuning that will make the difference between an acceptable colour, and one that makes clients say "Wow!" **MW**

Sheet'aime

Cascading Style Sheets speed design. By David McFarland

All Web designers share two goals: to build Web pages quickly, and to keep those pages fast and lean so visitors to their sites don't have to wait. With even a basic understanding of Cascading Style Sheets (CSS), you can achieve both of these goals. And by using techniques outlined in this article to raise your CSS skills to the next level, you'll be able to build fast-loading pages in record time.

CSS gives Web designers a wide range of formatting options not possible with HTML alone; a CSS style can include margin settings, first-line indents, text leading, and precise border control.

CSS pages tend to load more quickly, too. CSS lets you format text without the font tag and can more succinctly define attributes for other HTML elements, such as tables and images.

At its root, a CSS style simply tells a Web browser how to display a particular piece of an HTML document. The two main types of CSS styles – class styles and tag selectors – let you control how formatting is applied.

Class styles As you can with styles in programs such as Microsoft Word and QuarkXPress, you can name class styles and then apply them manually. For example, to format the main text of a Web page, you could create a class style named bodyCopy that specified font, colour, leading, and other formatting options. To apply it to a paragraph, you'd simply add a small amount of code to the appropriate tag: `<p class="bodyCopy">`.

Time wasting

But although class styles allow you to format just the page elements you choose, they also require additional code and extra work. Adding `class="bodyCopy"` to a single paragraph tag isn't too time-consuming, but formatting hundreds of pages in this way certainly is.

Tag selectors There is another method – tag selectors redefine the behaviour of a page's HTML tags. By creating a style for the p tag, for example, you could make all paragraphs on a page display in red text that is 36 pixels tall. With tag selectors, instead of making up a name for the style, you use the name of the

tag – for example, td for a table cell or p for a paragraph.

In addition, you don't need to apply the style manually; Web browsers automatically apply the tag selector's formatting to every section of text contained within that tag.

Although automatic formatting can be a time-saver, a tag selector's approach isn't always desirable. You might not want every paragraph to look the same. You may need to divide a Web page into different sections – for example, a main content area, and two sidebars that have smaller text than the main area has.

If you know how to use a CSS refinement called contextual selectors, it's easy to take
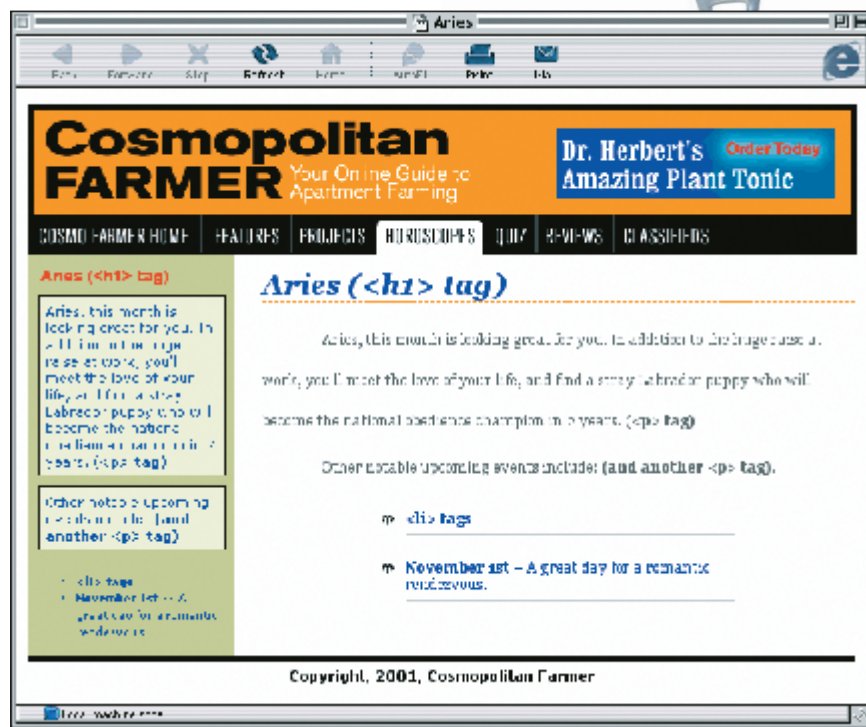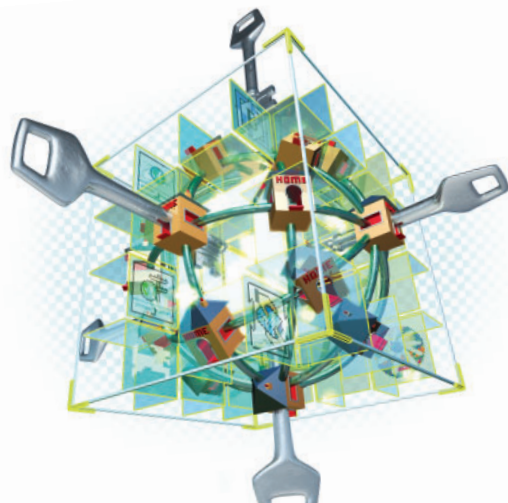
Context is crucial
The HTML code in the table cell on the left is exactly the same as the code in the cell on the right. Only their contexts differ; a cell that has a class style applied to it contains the sidebar content. Therefore, all of the tags in that cell are in the context of the sidebar style.

Contextual Selectors in Dreamweaver and GoLive

These visual HTML editors have slightly different methods.

Macromedia Dreamweaver

When creating a new contextual selector, choose the Use CSS Selector option in the New Style window, and then type the style name in the Selector field. For example, if you want to create a style for all p tags that appear within the context of HTML formatted with a sidebar class style, type .sidebar p in the field. Click on the OK button and continue to create your style using Dreamweaver's standard method.

Adobe GoLive

Creating a contextual selector in GoLive is even easier: in the Style Sheet toolbar, click on any of the three Style buttons – Tag, Class, or ID. In the Basics tab of the CSS Selector Inspector, type the name of the contextual selector: for example, .sidebar p to create a style for every p tag in the sidebar class.

Unfortunately, although GoLive does let you create contextual selectors, it can't display contextual-selector styles – you'll need to preview your Web page in a CSS-compliant browser to see how they look. In addition, GoLive treats any contextual selector that begins with a class name – such as .sidebar p – as a class style.

The contextual selector will appear under the Style tab of the Text Inspector, and GoLive even lets you apply it as you would any other class. However, applying it in this way is incorrect, and although GoLive will display the style properties, CSS-compliant browsers won't.

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advantage of the benefits offered by class styles and tag selectors while avoiding their pitfalls.

A contextual selector allows you to limit the application of a style to HTML in a specific context. For instance, you can create a style that formats the text contained within a p tag as blue and nine pixels tall only when that text appears within a sidebar. How does a Web browser know the tag is inside a sidebar? You need to tell it – by using a class style to define that page area's context.

For an example of a common table-based page layout, see "Context is crucial": the beige box on the left side of the page is a single table cell, while the white box on the right is another cell, used for the page's main content. By creating a class called "main" and applying it to the td tag of the main content cell, you set the context for all other HTML placed inside that cell. Now a browser will consider any tag inside that cell to be within the context of the main style. This approach combines the selective control of class styles and the automated formatting of tag selectors. It's no more difficult to create a contextual selector style than it is to create a class style or tag selector. Simply add the context (which class or tag the style must appear within) when defining the style. To create two styles – main and sidebar – for the layout cells of a page, and two styles for paragraphs that appear inside the cells, you might use this code:

```
<style type="text/css">
.main {  background-color:
#FFFFFF}
.sidebar {  background-color:
#CCCC99}
.sidebar p {font-size: 10px;
color: #000099}
.main p {font-family: Georgia,
Times, serif; font-size: 12px;
color: #FF0000}
</style>
```

The .sidebar p code is a contextual selector, and indicates that the style should apply to p tags only when they're inside a segment of the document defined as class=sidebar. With this approach, you must create styles for each context on a page; this example would call for a set of contextual-selector styles for each tag that appears within the sidebar cell, and a set of regular styles for each tag in the rest of the page. After you complete this initial style-sheet building, your Web pages will nearly format themselves. Once you've set the context – applying the sidebar class to the left table cell, for instance – you can just type or paste text into the cell. The only formatting you'll need to do is applying the appropriate tag – h1 for heading 1, for example. The Web browser takes care of the rest.

There's an added benefit – if you copy text from the sidebar and paste it into the main content cell, you won't need to do any formatting. As the context of that text changes, so does the style used to format it, making it easy to reuse HTML content in other parts of the page or elsewhere on your site without having to reformat it.

CSS provides designers with previously unavailable power to control the look of Web pages – and looking good can go hand in hand with working smart. Using these simple steps, you can take advantage of the space- and time-saving benefits of contextual selectors. **MW**

Web publishing tips and tricks

Style choice

On certain Web sites, text links don't appear underlined; instead they show up in a different colour. You too can do this by redefining the <a> tag with Cascading Style Sheets, turning on the none option for the Decoration property.

Fireworks movement

In Fireworks, you can use the Resize, Skew or Distort tools to move objects. When using one of these tools to transform an object, move the tool over the object and the cursor becomes a four-headed arrow. When this arrow appears, click-&-drag to move the object.

Framed target

If you get carried away using frames nestled in frames – or link another framed site to find its frames loading inside yours – you can use `Target="_Top"` to cancel out the frameset and use regular HTML.

Flash copying

Again in Fireworks, to copy an object to another frame, select the object you want to copy, then click the blue rectangle to the right of the frame while holding the Option key. Release the mouse button when the flashing black square is over the frame you want to copy to.

Change of command

In Dreamweaver, if you want to delete a Command or change its name, choose Commands-Edit Commands List. In the resulting dialog box, click the commands name to select it. Type a new name or click delete.

Frequent fonts

Fonts that should work on both Mac and Windows browsers include: Arial; Arial Black, Comic sans MS, Courier; Courier New; Georgia; Impact; Monotype Sorts; Times; Times New Roman; Trebuchet MS; Veranda; Webdings; and Wingdings.

• **Make a bootable CD** • **Mac maintenance** • **Protect privacy**

Q&A/tips

Readers' questions answered and handy tips. **By Christopher Breen**

Bootable CDs

Q How do I create a bootable start-up CD, and what should I put on it?
Joan Taft

A Unless, like me, you're sometimes heedless about where you leave those items most precious to you, you already have a start-up disc of sorts – the system software CD that came with your Mac. But it doesn't include all the tools you need to boot your Mac and bring it back from the dead. You can create a CD that will do both.

First, you'll require software with which to create a bootable CD. I regret to say that Apple's Disc Burner does not fit the bill – it can't create bootable discs.

If you've bought a third-party CD-RW drive, though, you've probably got the best tool for the job – Roxio's Toast. If you don't have a copy of Toast, you can buy Toast Titanium for £49 (Computer 2000, 01256 463 344). The version of Toast that ships with most third-party CD-RW drives doesn't have as many features as Toast Titanium, but it can create bootable CDs. Here is how I'd do the job: Launch Apple's Disc Copy (in Mac OS 9.1, it's in the Utilities folder inside the Applications folder), and select Create New Image from the Image menu. In the resulting window, give the disk image a descriptive name – for example, "Emergency". Select 663,000K (CD-ROM 12cm, Full) from the Size pop-up menu, make sure the Mount Image option is selected, and click on Save (see "Image is everything").

Insert your system-software installation CD; then locate and launch the Mac OS Install application. Select the disk image you just created (in our example, the Emergency disk image) as the installation's destination. You can install a full system, or you can click on the installer's Customize button if you want to install a slimmed-down System Folder – just the Mac OS 9.1 option, for example. After the installation is complete, open Startup Items inside the Emergency image's System Folder. Remove the Mac OS Setup Assistant alias (so you won't be asked to configure the system when you boot from this CD).

Now that you've created an image of a bootable CD, it's time to put something worthwhile on it. To me, that means diagnostic and repair utilities. If you're installing Alsoft's Disk Warrior, launch the installer and select the Emergency image as your
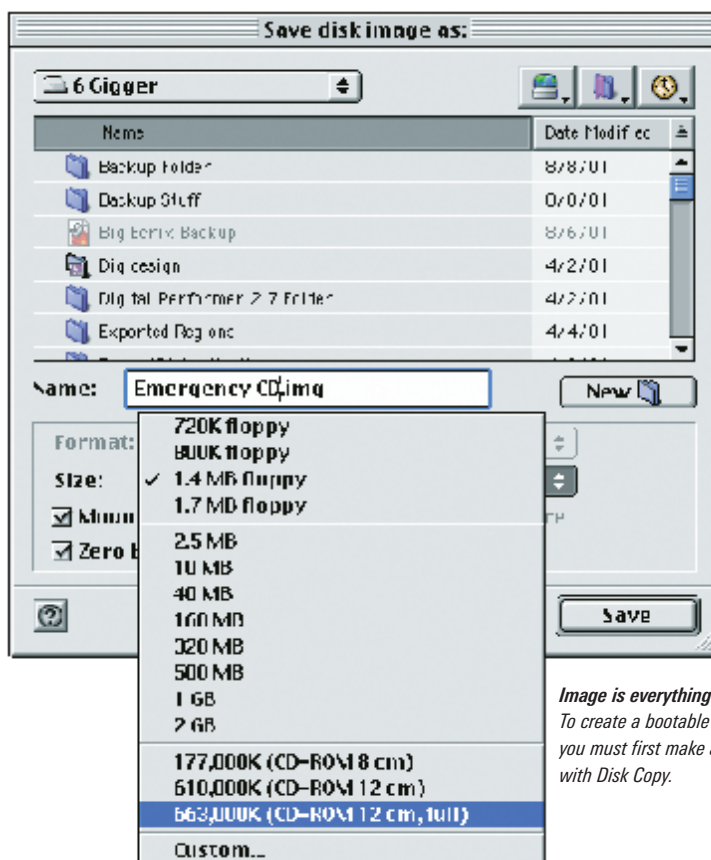

Image is everything
To create a bootable start-up CD, you must first make a disk image with Disk Copy.

destination. Once the program has installed, launch the copy of Disk Warrior on Emergency; then enter your name and serial number. If you don't do this, Disk Warrior won't run from your CD.

The procedure is much the same for Norton Utilities. However, after installation, you may want to remove a couple of unnecessary items from the Emergency image. I've never found Disk Light to be very useful, so I drag it out of the Control Panels folder. Likewise, because you can't update the version of Norton Utilities on the CD (it's read-only, after all), I also toss out Live Update.

TechTool Pro 3 is a little trickier. You must first install it on your Mac's hard drive, along with any available updates. Then run the copy on your hard drive and select Preferences in the Edit menu. In the

Tip of the month: Download restart

TIP If you have an unmetered account with your ISP, chances are it's probably configured to disconnect you after a fixed time, often an hour or two. This is very frustrating when trying to download large files, for example software demos or updates. The ISP disconnects halfway through the download, and the file is useless.

If you're using Internet Explorer for Mac, though, there's a convenient way out. As soon as your connection fails, reconnect through the Remote Access control panel. Once reconnected, go to the Explorer download window that is still open, double click the half loaded file in question. This opens the progress window where you can
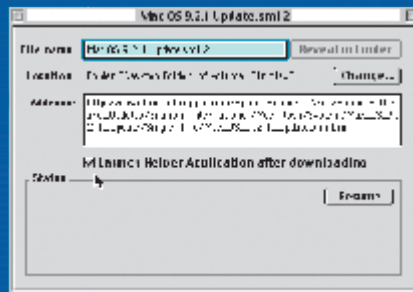
click on "resume". The file immediate reloads to the point where it broke off and automatically continues the download.

Congratulations to Philip Caine, he wins an hp deskjet 990CM printer. If you think you have a Tip of the month, send it to:
qanda@macworld.co.uk

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window that appears, deselect the Auto-Update Protection Files option (because your Emergency CD will be read-only, TechTool can't update its protection files). Quit TechTool.

Install a copy of TechTool Pro 3 and its updates on your Emergency image. Open the Preferences folder on your Mac, and copy the TechTool Pro Prefs file to the Preference folder of the System Folder on your Emergency image. This allows the copy of TechTool on the Emergency image to launch properly, without trying to update your protection files.

You're finally ready to burn your Emergency disc. Just launch Toast, select the Files & Folders option from the Format menu, and click on the Data button and then on the New CD button. Select all the files in your Emergency image and drag them into Toast's Files & Folders window. Now burn, baby, burn.

Maintaining Macs

Q How often should I perform maintenance on my hard drive, and what kind of maintenance should I perform?
Tom Kisanuki

A If you were to ask ten Mac troubleshooting gurus for an opinion on this subject, you would probably get eleven answers. For example, there are those who religiously follow Apple's advice to rebuild the desktop file once a month. Others rattle around under the hood only when a Mac refuses to boot. I fall somewhere in between those extremes.

When it comes to a relatively harmless maintenance procedure, such as rebuilding the desktop, (holding down the ⌘ and option keys at start-up), I wait until my Mac is acting up. An obvious sign that the desktop needs rebuilding is when generic icons appear in place of their colourful counterparts. But there are also less-obvious indications of trouble. For example, if my Mac seems sluggish, I'll run Micromat's free TechTool Lite (**www.micromat.com**) to rebuild the desktop from scratch. Zapping the PRAM – resetting the Mac's parameter RAM by holding down ⌘-option-P-R at start-up – I leave for more serious situations (like when a Mac refuses to boot).

When it comes to more-intrusive maintenance procedures – running diagnostic and repair utilities such as Alsoft's DiskWarrior (£65; Softline, 01883

745 111), Micromat's TechTool Pro (£95, Softline) and Symantec's Norton Utilities (£77; Computers Unlimited, 020 8358 5857) – I fall into the "If it ain't broke, don't fix it" camp. These are useful tools, but they have the potential to leave your Mac in a more fragile state than it was in before you enlisted their help. I therefore use these utilities only when my Macintosh really seems to need them – when it routinely crashes for no apparent reason, or a volume refuses to mount.

Underlying my somewhat lackadaisical attitude toward preventive maintenance is the sense of well-being that comes with having an up-to-date backup of all my important data. If you don't have the same sense of security, you should implement a backup strategy today.

Opening X files

Q I'm having trouble getting some of my files to open in OS X applications. For instance, when I double-click on a file that should be viewable in OS X programs such as TextEdit and Preview, the Classic environment launches and the file opens in something like SimpleText. How can I force these files to open in a native OS X application?
Robert Sinclair

A This is frustrating, and it's something I hope Apple will address in a future update of OS X. Although OS X allows you to designate a particular application to open a particular document type (you do so in the Show Application portion of the Get Info window), the method it provides does not work with SimpleText documents. If SimpleText was used to create a file, then OS X will launch the Classic environment (if it's not already running), where it can open the document in SimpleText.

Thankfully, this conundrum has some fairly simple workarounds. If you have the Developer Tools CD that ships with OS X, install it. Included in the installation is a Carbonized version of SimpleText. When you have this version of the application installed, and you double-click on a SimpleText document, the new version of SimpleText launches without booting up the Classic environment. Unfortunately, this native version of SimpleText is not available for download from Apple's Web site.)

I drag-&-drop documents not created by SimpleText to Wipe Creator, a free AppleScript

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Desktop dreams

TIP To get a different desktop picture every time you start your Mac (OS 8+) just create a folder with your chosen desktop pictures then simply drag-&-drop that onto the desktop of the desktop section of the Appearance control panel. You can access that control panel by control clicking the desktop.
Simon Jones
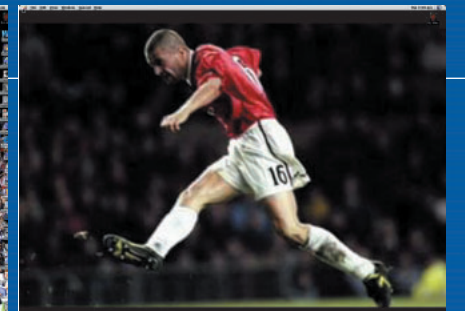
droplet from Scotland Software (**www.scotlandsoftware.com**) that strips the creator code from any document dropped on it. Removing this code allows OS X to open files in OS X-native applications. For example, if you drop a JPEG file on Wipe Creator, that file will open in OS X's Preview rather than in the non-OS X app that created it.

Privacy opt-ins

Q I've read reports that some online marketers track users' Internet browsing in ways I'm not comfortable with. Is there anything I can do to keep them from tracking me?
Turner Rouse

A Marketing outfits, such as DoubleClick, have engaged in practices that make people uncomfortable – for example, using browser cookies to gather personal data and employing that information to target Web advertisements more specifically. You can stop DoubleClick doing so by travelling to this Web site: **www.doubleclick.net:80/us/corporate/privacy /privacy/ad-cookie/default.asp?asp_object_1=&** and, with cookies enabled, clicking on the Opt-Out button. This places a cookie in your browser that repels any additional cookies the DoubleClick system might want to plant.

Spam is spawn of Satan

TIP My greatest desire is that spammers – the soulless scoundrels who fill your email box with unsolicited crud – someday meet an everlastingly fiery end. But while we wait for divine retribution, you can do something about their effluvia. Namely, use your email client's filtering feature to prescan email for certain key words in the subject heading. You can direct your client to channel these messages directly into the Deleted Items folder (though you may want to scan the contents of this folder from time to time, in case a correspondent accidentally used one of the forbidden words in the subject heading of a message that you want to receive). I'd suggest that you add the following words and phrases to your junk-mail filter list:$$$; £££; ADV; advertising; anything anyone; barely legal; casino; credit card.

Pardon my French

TIP For those of you confounded by the AppleScript (published in October 2001's Q&A) that lets you place double arrows on scroll bars, a bit more information may help. The "double angle brackets" that appear in the tip are actually punctuation marks known to discerning grammarians as guillemets (and to hoi

polloi as French quotation marks). To create the guillemets (« and ») in the script below, type option–\ (forward slash) and shift-option–\, respectively, not the angle bracket characters.

```
        tell application
"Appearance"
        set scroll bar arrow
style to «constant
    ****dubl»
        quit
    end tell
```

Different stroke

TIP In Mac OS 9.1, you can hide a background application with a single keystroke. Here's how: Launch the Keyboard control panel and click on the Function Keys button. Open your Mac's System Folder, then the Apple Menu Items folder, and then the Speakable Items folder. If the Speakable Items folder isn't present, you must custom-install the English Speech Recognition software from the Mac OS 9.1 installation disc. Drag the Hide All Applications AppleScript to an empty function-key slot, and click on OK. Now when you press that function key, the AppleScript will hide all open applications and return you to the Finder.
Gregory Meach

X screen grabs

TIP The shortcut keys for taking screen grabs are back in 10.1 (they went missing in 10.0.x). When you press ⌘-shift-4 you can take a picture of a selection. Or ⌘-shift-3 for the whole window. The pictures end up on your desktop.
Chris Leat

G4 server power

TIP If you have a Macintosh Server G4 and this error message appears: "Your server's redundant power supply requires attention. It's recommended that the power supply be replaced to maintain system reliability. Contact your Apple service provider for details." …and the Mac appears to be functioning normally, ignore the error. It can result if you have no additional hard drives or PCI cards installed in the Mac. The error is triggered because the back-up power supply expects to detect a certain current draw on the +5-volt line, and when it doesn't, the back-up power supply assumes something's gone wrong. It hasn't.   **MW**

Psychedelic iMacs

TIP Should you dangle a strong magnet in front of your iMac's monitor – causing colours reminiscent of a 1960s light show to appear on the screen – you can get rid of those colours by degaussing the iMac.

There's a trick to it, however. The degauss circuitry kicks in only when the iMac boots up from a shutdown state or when the computer restarts. It doesn't activate when you wake the iMac from sleep.

Also, degauss works better if the iMac has had time to cool. Therefore, if your iMac really needs a good degaussing, shut it down for awhile before booting it back up.

Andy Ihnatko

Open invitation

How refreshing it is to be at a party and on the other side of the snide comment "Good God – who invited him?". We're at a big party celebrating the success of Mac OS X. And the him is Darwin, the Unix creature who lives underneath OS X's Aqua interface. Ever since Apple's new operating system arrived, everyone has been bit uneasy about the little guy.

It's not Darwin's fault. Much like a fish-out-of-water partygoer no one knows anything about – except for one woman who's pretty sure that he plays bass in a Duran Duran cover band – the very presence of this implementation of Unix has caused suspicion, fear, and loathing to spread throughout the OS X celebration.

Social conventions can be cruel. But looks can be deceiving. Even the most questionable invitee can end up being the centre of attention. Darwin's like that. Here's what he brings to the party:

When Apple announced its plan to build its future on an open-source (well, open-source-ish) operating system that would be based on Unix, the number of Mac OS developers instantly increased by one order of magnitude (the exact number quoted varies depending on the people you ask – and on how much glue they've been sniffing). This fact alone makes Darwin worth keeping around, even if he does keep pestering the DJ to play something by The Bangles.

Darwin's evolution

Darwin made Mac OS instantly palatable to Unix developers; so far, more than 2,500 open-source apps have been brought to Mac OS via Darwin. Granted, few Mac users are going to see the ability to run the Pine mail client in a Terminal window as a great leap forward, but all the greatest hits of open source are here, including a lot of apps that'll shore up the Mac's presence in academic and enterprise computing. Browse through the links on **www.macgimp.org** – the home of MacGIMP, a next-to-free image editor that offers many of Photoshop's features at a very un-Photoshop-like price – to get an idea of the larger world that lies just beyond Aqua.

Unix developers aren't the only ones who'll welcome the arrival of Darwin on the desktop: old-school Mac developers are also getting in on the act. Just in the past few months, two longtime Mac apps, FileMaker's FileMaker Pro Server and 4D's WebStar, announced new OS X versions that are radically different from their previous Mac incarnations. Both programs are actually Darwin applications, lurking beneath the surface of Aqua and providing huge amounts of serving power. Then both companies wrote very pretty Aqua applications – in Cocoa for FileMaker, and Java for WebStar – for us to use when we're setting up server preferences.

Standards Boy, this is a big deal. The Big Shimmering Evil Green Cloud that once threatened to kill operating systems' futures was lack of hardware. Later, it was lack of software. But here in the world of the future, it's all about being agile enough to accept and implement any new standards – particularly networking standards – that come along.

Take Microsoft's .Net strategy, a scheme for deploying Microsoft-proprietary software modules from servers, across networks, using open protocols. In the absolute worst-case scenario, it would create new standards for establishing identity and conducting secure commerce that relied on Microsoft-licensed software. Bang – Microsoft would have a stranglehold on the Internet. But there's already an open-source movement to create a free implementation of .Net technologies for Linux… and since Linux is Darwin's cousin, an initiative for OS X is right behind that.

Power in numbers Before OS X, the world consisted of Windows and a balkanized collection of other operating systems. Now, there's Windows, and then there's the open-source community. Would you believe that this community, working together, could totally screw up any chance that Microsoft might have to abuse its .Net leverage? By getting .Net into everyone's hands, it could transform one company's power play into a free standard that would benefit everyone.

RSVP to Darwin As OS X matures, Unix operations will become something akin to AppleScript: a powerful resource that doesn't confuse people unless they willingly dive into it, and one that most users never exploit until they see the frabjously slick ways someone else is using it. I've been recommending two books published by O'Reilly and Associates: *Unix Power Tools* and *Unix in a Nutshell*. Of the two, *Power Tools* is the one you'll be referring to most often. *Nutshell* takes a classroom approach, but reading *Power Tools* is like idly watching an expert go about his business. You won't retain the entire picture right away, but it'll fix in your mind what you're capable of doing with the command line, and your eyes will thus be open to simpler ways of doing things that don't involve mousing.

I want you to walk right over to Darwin and introduce yourself. Don't pretend he isn't there. OK, maybe he has caused us an inconvenience or two, but he's got a heart of gold. Once you get to know him, you'll understand why he was invited in the first place. **MW**

> '**The Big Shimmering Evil Cloud that once threatened to kill operating systems' futures was lack of hardware, but here in the future, it's all about accepting and implementing new standards.'**